



06/03/14

Technical Report for

K.P. Kauffmann Company, Inc.

Wattenberg Tank

Accutest Job Number: D58015

Sampling Date: 05/21/14

Report to:

K.P. Kauffman Company, Inc.
1675 Broadway Suite 2800
Denver, CO 80202-4628
mhattel@msn.com; slaramesa@kpk.com;
kgilbert@kpk.com; dkuhn@kpk.com
ATTN: Susana Lara-Mesa

Total number of pages in report: 24



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Scott Heideman
Laboratory Director

Client Service contact: Renea Jackson 303-425-6021

Certifications: CO (CO00049), ID, NE (CO00049), ND (R-027), NJ (CO 0007), OK (D9942), UT (NELAP CO00049), TX (T104704511)

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Test results relate only to samples analyzed.

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Sample Summary

K.P. Kauffmann Company, Inc.

Job No: D58015

Wattenberg Tank

Sample Number	Collected Date	Time By	Received	Matrix Code Type	Client Sample ID
D58015-1	05/21/14	10:35 MDH	05/21/14	AQ Water	TANK-1
D58015-1F	05/21/14	10:35 MDH	05/21/14	AQ Water Filtered	TANK-1



CASE NARRATIVE / CONFORMANCE SUMMARY

Client: K.P. Kauffmann Company, Inc.

Job No D58015

Site: Wattenberg Tank

Report Date 6/3/2014 4:25:24 PM

On 05/21/2014, 1 sample(s), 0 Trip Blank(s), and 0 Field Blank(s) were received at Accutest Mountain States (AMS) at a temperature of 4.4 °C. The samples were intact and properly preserved, unless noted below. An AMS Job Number of D58015 was assigned to the project. The lab sample ID, client sample ID, and date of sample collection are detailed in the report's Results Summary.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

Metals By Method SW846 6010C

Matrix AQ

Batch ID: MP13001

- All samples were digested and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D58043-1AMS, D58043-1AMSD, D58043-1ASDL were used as the QC samples for the metals analysis.
- The matrix spike (MS) recovery(s) of Sodium are outside control limits. Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.
- The serial dilution RPD(s) for Sodium are outside control limits for sample MP13001-SD1. Probable cause due to sample homogeneity.
- MP13001-SD1 for Sodium: Serial dilution indicates possible matrix interference.

Wet Chemistry By Method ASTM D287

Matrix ALL

Batch ID: GN24870

- The data for ASTM D287 meets quality control requirements.

Wet Chemistry By Method EPA 1664A

Matrix AQ

Batch ID: GP12715

- All samples were prepared and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D57984-3MS were used as the QC samples for the HEM Oil and Grease analysis.

Wet Chemistry By Method EPA 300.0/SW846 9056

Matrix AQ

Batch ID: GP12640

- All samples were prepared and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D58049-3MS, D58049-3MSD were used as the QC samples for the Chloride, Nitrogen, Nitrate, Nitrogen, Nitrite, Sulfate, Chloride analysis.
- D58015-1 for Nitrogen, Nitrate: Elevated detection limit due to matrix interference.
- D58015-1 for Nitrogen, Nitrite: Elevated detection limit due to matrix interference.

Wet Chemistry By Method SM 2540C-2011**Matrix** AQ**Batch ID:** GN24826

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D58015-1DUP were used as the QC samples for the Solids, Total Dissolved analysis.

Wet Chemistry By Method SM 5310B-2011**Matrix** AQ**Batch ID:** GP12673

- All samples were prepared and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D58110-2DUP, D58110-2MS, D58110-2MSD were used as the QC samples for the Total Organic Carbon analysis.

Wet Chemistry By Method SM4500HB+-2011/9040C**Matrix** AQ**Batch ID:** GN24797

- D58015-1 for pH: Analysis performed past the required 15 minutes from collection time/holding time.

AMS certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting AMS's Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

AMS is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. This report is authorized by AMS indicated via signature on the report cover.

Summary of Hits

Page 1 of 1

Job Number: D58015
Account: K.P. Kauffmann Company, Inc.
Project: Wattenberg Tank
Collected: 05/21/14

Lab Sample ID	Client Sample ID	Result/ Analyte Qual	RL	MDL	Units	Method
D58015-1	TANK-1					
		Chloride	10400	500	mg/l	EPA 300.0/SW846 9056
		HEM Oil and Grease	325	4.9	mg/l	EPA 1664A
		Solids, Total Dissolved	19100	10	mg/l	SM 2540C-2011
		Specific Gravity by Hydrometer	1.0122			ASTM D287
		Sulfate	61.3	50	mg/l	EPA 300.0/SW846 9056
		Total Organic Carbon	287	50	mg/l	SM 5310B-2011
		pH ^a	6.63		su	SM4500HB+ -2011/9040C
D58015-1F	TANK-1					
		Calcium	338000	20000	ug/l	SW846 6010C
		Magnesium	35900	10000	ug/l	SW846 6010C
		Potassium	171000	50000	ug/l	SW846 6010C
		Sodium	7120000	20000	ug/l	SW846 6010C

(a) Analysis performed past the required 15 minutes from collection time/holding time.



Sample Results

Report of Analysis

Report of Analysis

Client Sample ID: TANK-1
 Lab Sample ID: D58015-1
 Matrix: AQ - Water
 Project: Wattenberg Tank

Date Sampled: 05/21/14
 Date Received: 05/21/14
 Percent Solids: n/a

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chloride	10400	500	mg/l	1000	05/22/14 18:21	JB	EPA 300.0/SW846 9056
HEM Oil and Grease	325	4.9	mg/l	1	06/03/14	SWT	EPA 1664A
Nitrogen, Nitrate ^a	< 1.0	1.0	mg/l	100	05/22/14 10:28	JB	EPA 300.0/SW846 9056
Nitrogen, Nitrite ^a	< 0.40	0.40	mg/l	100	05/22/14 10:28	JB	EPA 300.0/SW846 9056
Solids, Total Dissolved	19100	10	mg/l	1	05/27/14	AK	SM 2540C-2011
Specific Gravity by Hydromete	1.0122			1	05/29/14	MM	ASTM D287
Sulfate	61.3	50	mg/l	100	05/22/14 10:28	JB	EPA 300.0/SW846 9056
Total Organic Carbon	287	50	mg/l	50	05/29/14 13:16	GH	SM 5310B-2011
pH ^b	6.63		su	1	05/22/14 13:00	SK	SM4500HB + -2011/9040C

(a) Elevated detection limit due to matrix interference.

(b) Analysis performed past the required 15 minutes from collection time/holding time.

RL = Reporting Limit

Report of Analysis

Client Sample ID: TANK-1
Lab Sample ID: D58015-1F
Matrix: AQ - Water Filtered

Date Sampled: 05/21/14
Date Received: 05/21/14
Percent Solids: n/a

Project: Wattenberg Tank

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Calcium	338000	20000	ug/l	5	05/23/14	05/23/14 KV	SW846 6010C ¹	SW846 3010A ²
Magnesium	35900	10000	ug/l	5	05/23/14	05/23/14 KV	SW846 6010C ¹	SW846 3010A ²
Potassium	171000	50000	ug/l	5	05/23/14	05/23/14 KV	SW846 6010C ¹	SW846 3010A ²
Sodium	7120000	20000	ug/l	5	05/23/14	05/23/14 KV	SW846 6010C ¹	SW846 3010A ²

(1) Instrument QC Batch: MA4799

(2) Prep QC Batch: MP13001

RL = Reporting Limit



Misc. Forms

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Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

Metals Analysis

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D58015
Account: KPKCOD - K.P. Kauffmann Company, Inc.
Project: Wattenberg Tank

QC Batch ID: MP13001
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date: 05/23/14

Metal	RL	IDL	MDL	MB raw	final
Aluminum	100	11	41		
Antimony	30	2.1	19		
Arsenic	25	3.8	5.6		
Barium	10	.2	1.4		
Beryllium	10	.9	1.2		
Boron	50	.8	6.6		
Cadmium	10	.2	.36		
Calcium	400	2.4	41	11.3	<400
Chromium	10	.3	.4		
Cobalt	5.0	.5	.57		
Iron	70	1.5	9.5		
Lead	50	2.1	21		
Lithium	5.0	.4	2.7		
Magnesium	200	6.8	19	-4.4	<200
Manganese	5.0	.5	.46		
Molybdenum	10	.4	.84		
Nickel	30	.5	.87		
Phosphorus	100	15	20		
Potassium	1000	99	270	-33	<1000
Selenium	50	7.1	11		
Silicon	50	4.7	5.2		
Silver	30	.3	.6		
Sodium	400	7.3	170	45.3	<400
Strontium	5.0	.01	.12		
Thallium	10	1.8	4		
Tin	50	12	16		
Titanium	10	.1	2.1		
Uranium	50	2.9	5.5		
Vanadium	10	.4	.4		
Zinc	30	.4	3.2		

Associated samples MP13001: D58015-1F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D58015
Account: KPKCOD - K.P. Kauffmann Company, Inc.
Project: Wattenberg Tank

QC Batch ID: MP13001
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date: 05/23/14

Metal	D58043-1A Original MS	Spikelot ICPALL2	% Rec	QC Limits
Aluminum				
Antimony	anr			
Arsenic	anr			
Barium	anr			
Beryllium	anr			
Boron	anr			
Cadmium	anr			
Calcium	4800	31900	25000	108.4 75-125
Chromium	anr			
Cobalt				
Iron				
Lead	anr			
Lithium				
Magnesium	774	23600	25000	91.3 75-125
Manganese				
Molybdenum				
Nickel	anr			
Phosphorus				
Potassium	4940	31000	25000	104.2 75-125
Selenium	anr			
Silicon				
Silver	anr			
Sodium	858000	900000	25000	168.0(a) 75-125
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc	anr			

Associated samples MP13001: D58015-1F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D58015
 Account: KPKCOD - K.P. Kauffmann Company, Inc.
 Project: Wattenberg Tank

QC Batch ID: MP13001
 Matrix Type: AQUEOUS

Methods: SW846 6010C
 Units: ug/l

Prep Date: 05/23/14

Metal	D58043-1A Original MS	Spikelot ICPALL2 % Rec	QC Limits
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(a) Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.

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MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D58015
Account: KPKCOD - K.P. Kauffmann Company, Inc.
Project: Wattenberg Tank

QC Batch ID: MP13001
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date: 05/23/14

Metal	D58043-1A Original MSD	Spikelot ICPALL2	% Rec	MSD RPD	QC Limit	
Aluminum						
Antimony	anr					
Arsenic	anr					
Barium	anr					
Beryllium	anr					
Boron	anr					
Cadmium	anr					
Calcium	4800	31400	25000	106.4	1.6	20
Chromium	anr					
Cobalt						
Iron						
Lead	anr					
Lithium						
Magnesium	774	23100	25000	89.3	2.1	20
Manganese						
Molybdenum						
Nickel	anr					
Phosphorus						
Potassium	4940	30500	25000	102.2	1.6	20
Selenium	anr					
Silicon						
Silver	anr					
Sodium	858000	885000	25000	108.0	1.7	20
Strontium						
Thallium						
Tin						
Titanium						
Uranium						
Vanadium						
Zinc	anr					

Associated samples MP13001: D58015-1F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D58015
Account: KPKCOD - K.P. Kauffmann Company, Inc.
Project: Wattenberg Tank

QC Batch ID: MP13001
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date: 05/23/14

Metal	BSP Result	Spikelot ICPALL2	% Rec	QC Limits
Aluminum				
Antimony	anr			
Arsenic	anr			
Barium	anr			
Beryllium	anr			
Boron	anr			
Cadmium	anr			
Calcium	25100	25000	100.4	80-120
Chromium	anr			
Cobalt				
Iron				
Lead	anr			
Lithium				
Magnesium	23200	25000	92.8	80-120
Manganese				
Molybdenum				
Nickel	anr			
Phosphorus				
Potassium	24000	25000	96.0	80-120
Selenium	anr			
Silicon				
Silver	anr			
Sodium	22400	25000	89.6	80-120
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc	anr			

Associated samples MP13001: D58015-1F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

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SERIAL DILUTION RESULTS SUMMARY

Login Number: D58015
 Account: KPKCOD - K.P. Kauffmann Company, Inc.
 Project: Wattenberg Tank

QC Batch ID: MP13001
 Matrix Type: AQUEOUS

Methods: SW846 6010C
 Units: ug/l

Prep Date: 05/23/14

Metal	D58043-1A Original	SDL 1:5	%DIF	QC Limits
Aluminum				
Antimony	anr			
Arsenic	anr			
Barium	anr			
Beryllium	anr			
Boron	anr			
Cadmium	anr			
Calcium	4800	5260	9.5	0-10
Chromium	anr			
Cobalt				
Iron				
Lead	anr			
Lithium				
Magnesium	774	846	9.3	0-10
Manganese				
Molybdenum				
Nickel	anr			
Phosphorus				
Potassium	4940	5300	7.2	0-10
Selenium	anr			
Silicon				
Silver	anr			
Sodium	858000	971000	13.2* (a)	0-10
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc	anr			

Associated samples MP13001: D58015-1F

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (anr) Analyte not requested
 (a) Serial dilution indicates possible matrix interference.

General Chemistry

QC Data Summaries

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Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries

METHOD BLANK AND SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D58015
Account: KPKCOD - K.P. Kauffmann Company, Inc.
Project: Wattenberg Tank

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Chloride	GP12640/GN24805	0.50	0.0	mg/l	5	4.85	97.0	90-110%
HEM Oil and Grease	GP12715/GN24930	5.0	0.0	mg/l	40	34.1	85.3	78-114%
Nitrogen, Nitrate	GP12640/GN24805	0.010	0.0	mg/l	0.1	0.0991	99.1	90-110%
Nitrogen, Nitrite	GP12640/GN24805	0.0040	0.0	mg/l	0.05	0.0477	95.4	90-110%
Solids, Total Dissolved	GN24826	10	0.0	mg/l	400	405	101.3	90-110%
Sulfate	GP12640/GN24805	0.50	0.0	mg/l	5	5.12	102.4	90-110%
Total Organic Carbon	GP12673/GN24865	1.0	0.0	mg/l	8.82	8.41	95.4	90-110%
pH	GN24797			su	8.00	8.00	100.0	99.3-100.7%

Associated Samples:
Batch GN24797: D58015-1
Batch GN24826: D58015-1
Batch GP12640: D58015-1
Batch GP12673: D58015-1
Batch GP12715: D58015-1
(*) Outside of QC limits

BLANK SPIKE DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D58015
Account: KPKCOD - K.P. Kauffmann Company, Inc.
Project: Wattenberg Tank

Analyte	Batch ID	Units	Spike Amount	BSD Result	RPD	QC Limit
HEM Oil and Grease	GP12715/GN24930	mg/l	40	36.9	7.9	20%

Associated Samples:
Batch GP12715: D58015-1
(*) Outside of QC limits

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DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D58015
Account: KPKCOD - K.P. Kauffmann Company, Inc.
Project: Wattenberg Tank

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Solids, Total Dissolved	GN24826	D58015-1	mg/l	19100	19100	0.0	0-20%
Total Organic Carbon	GP12673/GN24865	D58110-2	mg/l	1.1	1.0	9.5	0-20%

Associated Samples:
Batch GN24826: D58015-1
Batch GP12673: D58015-1
(*) Outside of QC limits

7.3
7

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D58015
Account: KPKCOD - K.P. Kauffmann Company, Inc.
Project: Wattenberg Tank

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Chloride	GP12640/GN24805	D58049-3	mg/l	43.2	25	134	104.0	80-120%
Chloride	GP12640/GN24805	D58049-3	mg/l	108	25	134	104.0	80-120%
HEM Oil and Grease	GP12715/GN24930	D57984-3	mg/l	0.0	40	36.7	91.8	78-114%
Nitrogen, Nitrate	GP12640/GN24805	D58049-3	mg/l	0.38	0.1	0.48	100.0	80-120%
Nitrogen, Nitrate	GP12640/GN24805	D58049-3	mg/l	0.34	0.1	0.48	100.0	80-120%
Nitrogen, Nitrite	GP12640/GN24805	D58049-3	mg/l	0.81	0.25	1.0	92.3	80-120%
Nitrogen, Nitrite	GP12640/GN24805	D58049-3	mg/l	0.78	0.25	1.0	92.3	80-120%
Sulfate	GP12640/GN24805	D58049-3	mg/l	50.9	25	85.9	105.6	80-120%
Sulfate	GP12640/GN24805	D58049-3	mg/l	59.5	25	85.9	105.6	80-120%
Total Organic Carbon	GP12673/GN24865	D58110-2	mg/l	1.1	10	11.2	101.0	80-120%

Associated Samples:

Batch GP12640: D58015-1

Batch GP12673: D58015-1

Batch GP12715: D58015-1

(*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

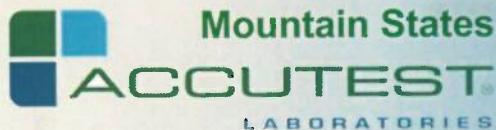
7.4
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MATRIX SPIKE DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D58015
Account: KPKCOD - K.P. Kauffmann Company, Inc.
Project: Wattenberg Tank

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MSD Result	RPD	QC Limit
Chloride	GP12640/GN24805	D58049-3	mg/l	43.2	25	134	0.0	20%
Chloride	GP12640/GN24805	D58049-3	mg/l	108	25	134	0.0	20%
Nitrogen, Nitrate	GP12640/GN24805	D58049-3	mg/l	0.38	0.1	0.49	2.1	20%
Nitrogen, Nitrate	GP12640/GN24805	D58049-3	mg/l	0.34	0.1	0.49	2.1	20%
Nitrogen, Nitrite	GP12640/GN24805	D58049-3	mg/l	0.81	0.25	1.0	0.1	20%
Nitrogen, Nitrite	GP12640/GN24805	D58049-3	mg/l	0.78	0.25	1.0	0.1	20%
Sulfate	GP12640/GN24805	D58049-3	mg/l	50.9	25	85.8	0.1	20%
Sulfate	GP12640/GN24805	D58049-3	mg/l	59.5	25	85.8	0.1	20%
Total Organic Carbon	GP12673/GN24865	D58110-2	mg/l	1.1	10	10.9	2.7	20%

Associated Samples:
Batch GP12640: D58015-1
Batch GP12673: D58015-1
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits



07/07/14

Technical Report for

K.P. Kauffman Company, Inc.

Wattenberg Tank

PO# 7591

Accutest Job Number: D59056

Sampling Date: 06/23/14

Report to:

K.P. Kauffman Company, Inc.
1675 Broadway Suite 2800
Denver, CO 80202-4628
mhattel@msn.com; slaramesa@kpk.com;
kgilbert@kpk.com; dkuhn@kpk.com
ATTN: Susana Lara-Mesa

Total number of pages in report: 28



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Scott Heideman
Laboratory Director

Client Service contact: Renea Jackson 303-425-6021

Certifications: CO (CO00049), ID, NE (CO00049), ND (R-027), NJ (CO 0007), OK (D9942), UT (NELAP CO00049), TX (T104704511)

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Test results relate only to samples analyzed.

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Sample Summary

K.P. Kauffman Company, Inc.

Job No: D59056

Wattenberg Tank
Project No: PO# 7591

Sample Number	Collected		Received	Matrix		Client Sample ID
	Date	Time By		Code	Type	
D59056-1	06/23/14	09:15 MH	06/23/14	AQ	Water	TANK-I
D59056-1F	06/23/14	09:15 MH	06/23/14	AQ	Water Filtered	TANK-I



CASE NARRATIVE / CONFORMANCE SUMMARY

Client: K.P. Kauffman Company, Inc.

Job No D59056

Site: Wattenberg Tank

Report Date 7/7/2014 3:28:12 PM

On 06/23/2014, 1 sample(s), 0 Trip Blank(s), and 0 Field Blank(s) were received at Accutest Mountain States (AMS) at a temperature of 13.3 °C. The samples were intact and properly preserved, unless noted below. An AMS Job Number of D59056 was assigned to the project. The lab sample ID, client sample ID, and date of sample collection are detailed in the report's Results Summary.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

Metals By Method SW846 6010C

Matrix AQ

Batch ID: MP13281

- All samples were digested and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D58834-1FMS, D58834-1FMSD, D58834-1FSDL were used as the QC samples for the metals analysis.

Wet Chemistry By Method ASTM D287

Matrix ALL

Batch ID: GN25366

- The data for ASTM D287 meets quality control requirements.

Wet Chemistry By Method EPA 1664A

Matrix AQ

Batch ID: GP12969

- All samples were prepared and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.

Wet Chemistry By Method EPA 300.0/SW846 9056

Matrix AQ

Batch ID: GP12887

- All samples were prepared and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D59047-6MS, D59047-6MSD were used as the QC samples for the Chloride, Nitrogen, Nitrate, Nitrogen, Nitrite, Sulfate, Chloride analysis.
- D59056-1 for Sulfate: Elevated detection limit due to matrix interference.
- D59056-1 for Nitrogen, Nitrite: Elevated detection limit due to matrix interference.
- D59056-1 for Nitrogen, Nitrate: Elevated detection limit due to matrix interference.

Wet Chemistry By Method SM 2540C-2011

Matrix AQ

Batch ID: GN25298

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D59056-1DUP were used as the QC samples for the Solids, Total Dissolved analysis.

Wet Chemistry By Method SM 5310B-2011

Matrix AQ	Batch ID: GP12920
------------------	--------------------------

- All samples were prepared and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D59118-1MS, D59118-1MSD, D59118-2DUP were used as the QC samples for the Total Organic Carbon analysis.

Wet Chemistry By Method SM4500HB+-2011/9040C

Matrix AQ	Batch ID: GN25245
------------------	--------------------------

- D59056-1 for pH: Analysis performed past the required 15 minutes from collection time/holding time.

AMS certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting AMS's Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

AMS is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. This report is authorized by AMS indicated via signature on the report cover.

Summary of Hits

Page 1 of 1

Job Number: D59056
Account: K.P. Kauffman Company, Inc.
Project: Wattenberg Tank
Collected: 06/23/14

Lab Sample ID	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
D59056-1	TANK-I					
Chloride		11200	500		mg/l	EPA 300.0/SW846 9056
HEM Oil and Grease		160	4.8		mg/l	EPA 1664A
Solids, Total Dissolved		20700	10		mg/l	SM 2540C-2011
Specific Gravity by Hydrometer		1.0165				ASTM D287
Total Organic Carbon		227	50		mg/l	SM 5310B-2011
pH ^a		6.86			su	SM4500HB + -2011/9040C
D59056-1F	TANK-I					
Calcium		319000	20000		ug/l	SW846 6010C
Magnesium		41900	10000		ug/l	SW846 6010C
Potassium		1090000	50000		ug/l	SW846 6010C
Sodium		5700000	20000		ug/l	SW846 6010C

(a) Analysis performed past the required 15 minutes from collection time/holding time.



Sample Results

Report of Analysis

Report of Analysis

Client Sample ID: TANK-I
Lab Sample ID: D59056-1
Matrix: AQ - Water
Project: Wattenberg Tank

Date Sampled: 06/23/14
Date Received: 06/23/14
Percent Solids: n/a

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chloride	11200	500	mg/l	1000	06/23/14 17:17	SK	EPA 300.0/SW846 9056
HEM Oil and Grease	160	4.8	mg/l	1	07/07/14	SWT	EPA 1664A
Nitrogen, Nitrate ^a	< 1.0	1.0	mg/l	100	06/23/14 14:13	SK	EPA 300.0/SW846 9056
Nitrogen, Nitrite ^a	< 0.40	0.40	mg/l	100	06/23/14 14:13	SK	EPA 300.0/SW846 9056
Solids, Total Dissolved	20700	10	mg/l	1	06/26/14	JD	SM 2540C-2011
Specific Gravity by Hydromete	1.0165			1	07/01/14	MM	ASTM D287
Sulfate ^a	< 50	50	mg/l	100	06/23/14 14:13	SK	EPA 300.0/SW846 9056
Total Organic Carbon	227	50	mg/l	50	06/26/14 15:15	SK	SM 5310B-2011
pH ^b	6.86		su	1	06/23/14 14:40	SK	SM4500HB + -2011/9040C

(a) Elevated detection limit due to matrix interference.

(b) Analysis performed past the required 15 minutes from collection time/holding time.

RL = Reporting Limit

Report of Analysis

Client Sample ID: TANK-I
Lab Sample ID: D59056-1F
Matrix: AQ - Water Filtered
Project: Wattenberg Tank

Date Sampled: 06/23/14
Date Received: 06/23/14
Percent Solids: n/a

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Calcium	319000	20000	ug/l	5	06/26/14	06/27/14 KV	SW846 6010C ¹	SW846 3010A ³
Magnesium	41900	10000	ug/l	5	06/26/14	06/27/14 KV	SW846 6010C ¹	SW846 3010A ³
Potassium	1090000	50000	ug/l	5	06/26/14	06/27/14 KV	SW846 6010C ¹	SW846 3010A ³
Sodium	5700000	20000	ug/l	5	06/26/14	06/30/14 KV	SW846 6010C ²	SW846 3010A ³

(1) Instrument QC Batch: MA4933

(2) Instrument QC Batch: MA4938

(3) Prep QC Batch: MP13281

RL = Reporting Limit



Misc. Forms

5

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

Metals Analysis

9

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D59056
Account: KPKCOD - K.P. Kauffman Company, Inc.
Project: Wattenberg Tank

QC Batch ID: MP13281
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date: 06/26/14

Metal	RL	IDL	MDL	MB raw	final
Aluminum	100	8.6	41		
Antimony	30	2.1	19		
Arsenic	25	3.8	5.6		
Barium	10	.2	1.4		
Beryllium	10	.8	1.2		
Boron	50	.8	6.6		
Cadmium	10	.2	.36		
Calcium	400	2.2	41	5.9	<400
Chromium	10	.3	.4		
Cobalt	5.0	.4	.57		
Copper	10	.8	1.9		
Iron	70	1.5	9.5		
Lead	50	2.1	21		
Lithium	5.0	.4	2.7		
Magnesium	200	6.8	19	6.1	<200
Manganese	5.0	.01	.46		
Molybdenum	10	.4	.84		
Nickel	30	.5	.87		
Phosphorus	100	15	20		
Potassium	1000	99	270	9.8	<1000
Selenium	50	7.1	11		
Silicon	50	4.7	5.2		
Silver	30	.3	.6		
Sodium	400	4.9	170	29.5	<400
Strontium	5.0	.01	.12		
Thallium	10	1.8	4		
Tin	50	12	16		
Titanium	10	.1	2.1		
Uranium	50	2.9	5.5		
Vanadium	10	.4	.4		
Zinc	30	.4	3.2		

Associated samples MP13281: D59056-1F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D59056
Account: KPKCOD - K.P. Kauffman Company, Inc.
Project: Wattenberg Tank

QC Batch ID: MP13281
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date: 06/26/14

Metal	RL	IDL	MDL	MB	
				raw	final

(anr) Analyte not requested

6.1.1

6

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D59056
 Account: KPKCOD - K.P. Kauffman Company, Inc.
 Project: Wattenberg Tank

QC Batch ID: MP13281
 Matrix Type: AQUEOUS

Methods: SW846 6010C
 Units: ug/l

Prep Date: 06/26/14

Metal	D58834-1F Original MS	Spikelot ICPALL2	% Rec	QC Limits
Aluminum				
Antimony	anr			
Arsenic	anr			
Barium	anr			
Beryllium	anr			
Boron	anr			
Cadmium	anr			
Calcium	110000	133000	25000	92.0 75-125
Chromium	anr			
Cobalt				
Copper	anr			
Iron				
Lead	anr			
Lithium				
Magnesium	8370	35200	25000	107.3 75-125
Manganese	anr			
Molybdenum	anr			
Nickel	anr			
Phosphorus				
Potassium	4190	32200	25000	112.0 75-125
Selenium	anr			
Silicon				
Silver	anr			
Sodium	6720	34100	25000	109.5 75-125
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc	anr			

Associated samples MP13281: D59056-1F

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D59056
 Account: KPKCOD - K.P. Kauffman Company, Inc.
 Project: Wattenberg Tank

QC Batch ID: MF13281
 Matrix Type: AQUEOUS

Methods: SW846 6010C
 Units: ug/l

Prep Date: 06/26/14

Metal	D58834-1F Original MS	Spikelot ICPALL2 % Rec	QC Limits
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(N) Matrix Spike Rec. outside of QC limits
 (anr) Analyte not requested

6.1.2
6

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D59056
Account: KPKCOD - K.P. Kauffman Company, Inc.
Project: Wattenberg Tank

QC Batch ID: MP13281
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date: 06/26/14

Metal	D58834-1F Original MSD	Spikelot ICPALL2	% Rec	MSD RPD	QC Limit
Aluminum					
Antimony	anr				
Arsenic	anr				
Barium	anr				
Beryllium	anr				
Boron	anr				
Cadmium	anr				
Calcium	110000	137000	25000	108.0	3.0
Chromium	anr				20
Cobalt					
Copper	anr				
Iron					
Lead	anr				
Lithium					
Magnesium	8370	35600	25000	108.9	1.1
Manganese	anr				20
Molybdenum	anr				
Nickel	anr				
Phosphorus					
Potassium	4190	32600	25000	113.6	1.2
Selenium	anr				20
Silicon					
Silver	anr				
Sodium	6720	34400	25000	110.7	0.9
Strontium					20
Thallium					
Tin					
Titanium					
Uranium					
Vanadium					
Zinc	anr				

Associated samples MP13281: D59056-1F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D59056
 Account: KPKCOD - K.P. Kauffman Company, Inc.
 Project: Wattenberg Tank

QC Batch ID: MF13281
 Matrix Type: AQUEOUS

Methods: SW846 6010C
 Units: ug/l

Prep Date: 06/26/14

Metal	D58834-1F Original MSD	Spikelot ICPALL2 % Rec	MSD RPD	QC Limit
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(N) Matrix Spike Rec. outside of QC limits
 (anr) Analyte not requested

6.1.2
6

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D59056
Account: KFKCOD - K.P. Kauffman Company, Inc.
Project: Wattenberg Tank

QC Batch ID: MP13281
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date: 06/26/14

Metal	BSP Result	Spikelot ICPALL2	% Rec	QC Limits
Aluminum				
Antimony	anr			
Arsenic	anr			
Barium	anr			
Beryllium	anr			
Boron	anr			
Cadmium	anr			
Calcium	26900	25000	107.6	80-120
Chromium	anr			
Cobalt				
Copper	anr			
Iron				
Lead	anr			
Lithium				
Magnesium	26500	25000	106.0	80-120
Manganese	anr			
Molybdenum	anr			
Nickel	anr			
Phosphorus				
Potassium	27000	25000	108.0	80-120
Selenium	anr			
Silicon				
Silver	anr			
Sodium	26600	25000	106.4	80-120
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc	anr			

Associated samples MP13281: D59056-1F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D59056
 Account: KPKCOD - K.P. Kauffman Company, Inc.
 Project: Wattenberg Tank

QC Batch ID: MP13281
 Matrix Type: AQUEOUS

Methods: SW846 6010C
 Units: ug/l

Prep Date: 06/26/14

Metal	BSP Result	Spikelot ICPALL2 % Rec	QC Limits
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(anr) Analyte not requested

6.13
6

SERIAL DILUTION RESULTS SUMMARY

Login Number: D59056
 Account: KPKCOD - K.P. Kauffman Company, Inc.
 Project: Wattenberg Tank

QC Batch ID: MP13281
 Matrix Type: AQUEOUS

Methods: SW846 6010C
 Units: ug/l

Prep Date: 06/26/14

D58834-1F		QC	
Metal	Original SDL 1:5	%DIF	Limits
Aluminum			
Antimony	anr		
Arsenic	anr		
Barium	anr		
Beryllium	anr		
Boron	anr		
Cadmium	anr		
Calcium	110000	118000	7.2 0-10
Chromium	anr		
Cobalt			
Copper	anr		
Iron			
Lead	anr		
Lithium			
Magnesium	8370	8710	4.1 0-10
Manganese	anr		
Molybdenum	anr		
Nickel	anr		
Phosphorus			
Potassium	4190	4220	0.7 0-10
Selenium	anr		
Silicon			
Silver	anr		
Sodium	6720	6670	0.7 0-10
Strontium			
Thallium			
Tin			
Titanium			
Uranium			
Vanadium			
Zinc	anr		

Associated samples MP13281: D59056-1F

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits

6.14
6

SERIAL DILUTION RESULTS SUMMARY

Login Number: D59056
 Account: KPKCOD - K.P. Kauffman Company, Inc.
 Project: Wattenberg Tank

QC Batch ID: MP13281
 Matrix Type: AQUEOUS

Methods: SW846 6010C
 Units: ug/l

Prep Date: 06/26/14

	D58834-1F		QC
Metal	Original SDL 1:5	%DIF	Limits

(anr) Analyte not requested

6.14
6

General Chemistry

QC Data Summaries

Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries

METHOD BLANK AND SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D59056
Account: KPKCOD - K.P. Kauffman Company, Inc.
Project: Wattenberg Tank

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Chloride	GP12887/GN25243	0.50	0.0	mg/l	5	4.97	99.4	90-110%
HEM Oil and Grease	GP12969/GN25402	5.0	0.0	mg/l	40	32.8	82.0	78-114%
Nitrogen, Nitrate	GP12887/GN25243	0.010	0.0	mg/l	0.1	0.103	103.0	90-110%
Nitrogen, Nitrite	GP12887/GN25243	0.0040	0.0	mg/l	0.05	0.0523	104.6	90-110%
Solids, Total Dissolved	GN25298	10	0.0	mg/l	400	402	100.5	90-110%
Sulfate	GP12887/GN25243	0.50	0.0	mg/l	5	4.96	99.2	90-110%
Total Organic Carbon	GP12920/GN25309	1.0	0.0	mg/l	8.82	8.84	100.2	90-110%
pH	GN25245			su	8.00	8.03	100.4	99.1-100.9%

Associated Samples:
Batch GN25245: D59056-1
Batch GN25298: D59056-1
Batch GP12887: D59056-1
Batch GP12920: D59056-1
Batch GP12969: D59056-1
(*) Outside of QC limits

7.1
7

BLANK SPIKE DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D59056
Account: KPKCOD - K.P. Kauffman Company, Inc.
Project: Wattenberg Tank

Analyte	Batch ID	Units	Spike Amount	BSD Result	RPD	QC Limit
HEM Oil and Grease	GP12969/GN25402	mg/l	40	34.9	6.2	20%

Associated Samples:
Batch GP12969: D59056-1
(*) Outside of QC limits

7.2

7

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D59056
Account: KPKCOD - K.P. Kauffman Company, Inc.
Project: Wattenberg Tank

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Solids, Total Dissolved	GN25298	D59056-1	mg/l	20700	20700	0.0	0-20%
Total Organic Carbon	GP12920/GN25309	D59118-2	mg/l	3.2	3.1	3.2	0-20%

Associated Samples:
Batch GN25298: D59056-1
Batch GP12920: D59056-1
(*) Outside of QC limits

7.3

7

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D59056
Account: KPKCOD - K.P. Kauffman Company, Inc.
Project: Wattenberg Tank

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Chloride	GP12887/GN25243	D59047-6	mg/l	34.8	50	84.3	99.0	80-120%
Nitrogen, Nitrate	GP12887/GN25243	D59047-6	mg/l	0.43	1	1.5	107.0	80-120%
Nitrogen, Nitrite	GP12887/GN25243	D59047-6	mg/l	0.0	0.5	0.51	102.0	80-120%
Sulfate	GP12887/GN25243	D59047-6	mg/l	172	50	223	102.0	80-120%
Total Organic Carbon	GP12920/GN25309	D59118-1	mg/l	3.2	10	13.4	102.0	80-120%

Associated Samples:

Batch GP12887: D59056-1

Batch GP12920: D59056-1

(*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

7.4

7

MATRIX SPIKE DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D59056
Account: KPKCOD - K.P. Kauffman Company, Inc.
Project: Wattenberg Tank

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MSD Result	RPD	QC Limit
Chloride	GP12887/GN25243	D59047-6	mg/l	34.8	50	84.0	0.4	20%
Nitrogen, Nitrate	GP12887/GN25243	D59047-6	mg/l	0.43	1	1.5	0.0	20%
Nitrogen, Nitrite	GP12887/GN25243	D59047-6	mg/l	0.0	0.5	0.55	7.5	20%
Sulfate	GP12887/GN25243	D59047-6	mg/l	172	50	223	0.0	20%
Total Organic Carbon	GP12920/GN25309	D59118-1	mg/l	3.2	10	13.1	2.3	20%

Associated Samples:

Batch GP12887: D59056-1

Batch GP12920: D59056-1

(*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

7.5
7

APEX CONSULTING SERVICES, INC.



July 18, 2014

566 West Willow Court
Reply to: P.O. Box 369
Louisville, CO 80027-0369
Phone: 303-665-1400
Fax: 303-665-0620
email: info@apexcsi.us

Ms. Susana Lara-Mesa
K.P. Kauffman Company, Inc.
World Trade Center
1675 Broadway, Suite 2800
Denver, CO 80202-4825

Re: June 2014, Groundwater Monitoring, Wattenberg Disposal Facility, Weld County, Colorado

Dear Ms. Lara-Mesa:

Apex Consulting Services, Inc. (APEX) has completed the June 2014 (semi-annual) groundwater monitoring at the Wattenberg Disposal Facility (Facility) in Weld County, Colorado (Figure 1). This letter report presents a summary of the work performed, the results of the groundwater analysis, and our conclusions.

BACKGROUND

The Facility was originally constructed in 1972 by the Amoco Production Company to dispose of production water from oil and gas wells in the D-J Basin. Wright's Disposal, Inc. purchased the Facility from Amoco in June 1989 and K.P. Kaufman Company, Inc. (KPK) purchased the Facility in June 1998. KPK currently operates the Facility for deep injection disposal of non-hazardous Class I and Class II liquid waste as defined in 40 CFR 144.6. The Facility is operated under the U.S. EPA Underground Injection Control Program, Final Permit No. CO 1516-2115. Three groundwater observation wells (OW-1, OW-2, and OW-3) are located around the periphery of the Facility to monitor groundwater flow direction, gradient, and quality. A groundwater monitoring plan was prepared by Nationwide Environmental Services, Inc. on January 3, 2002. The monitoring plan was subsequently approved by the Solid Waste Unit of the Colorado Department of Public Health and Environment. The monitoring plan included semi-annual groundwater monitoring (OW-1, OW-2, and OW-3) for major cations (calcium, magnesium, potassium, and sodium), major anions (bicarbonate, carbonate, chloride, nitrate, nitrite, and sulfate), Total Organic Carbon (TOC), benzene, toluene, ethylbenzene, and total xylenes (BTEX), and Total Petroleum Hydrocarbons (TPH). During the January 2007 sampling event, product was encountered on the groundwater in observation well OW-3. Contaminated soils in the vicinity of observation well OW-3 were excavated and replaced with clean fill. Observation well OW-3 was removed during the excavation of the contaminated soils. Following the removal of the contaminated soil, a new observation well (OW-3) was installed at the previous location. At the request of the Colorado Department of Public Health and Environment, an additional observation well (OW-4) was installed to the north of the Facility in June 2009. In July and October 2013, confirmation sampling for BTEX compounds confirmed the presence of benzene in observation well OW-1. In a September 2013 meeting with CDPHE, KPK noted that a release from an up-gradient facility occurred in 2008. In the meeting, KPK agreed to analyze laboratory data from OW-1 (from 2008 to the present) and to include STIFF diagrams in the December 2013 monitoring report. On March 4, 2014, an additional observation well was completed to the southeast of the Facility. The observation well was completed to a total depth of 24 feet. To date, groundwater has not been measured in the observation well. In a May 2014 meeting at the Facility with CDPHE, KPK agreed to compare and contrast laboratory data from the observation wells to laboratory data from the production water. A report detailing the work will be submitted in a separate document.

GROUNDWATER SAMPLING

Groundwater samples were collected for laboratory analyses from observation wells OW-1, OW-2, OW-3 and OW-4 on June 23, 2014. Prior to groundwater sampling, groundwater elevations were measured and recorded in

Ms. Lara-Mesa
July 18, 2014
Page 2

each of the aforementioned observation wells located at the Property. Due to the presence of benzene, a second groundwater sample was collected for laboratory analyses from observation well OW-1 on July 9, 2013 and from observation well OW-3 on July 16, 2014. The locations of the observation wells are illustrated on Figure 2. Each of the wells was surveyed to a local datum. Shallow groundwater was present in the wells at depths ranging from approximately 8.55 (OW-1) to 20.7 (OW-4) feet below the ground surface (bgs). Relative groundwater elevations are shown on Figure 2. Groundwater flow direction was determined to be to the north-northwest for this monitoring period. Free product was not present on the groundwater in any of the wells. The observation wells were prepared for sampling by purging three wet well volumes of groundwater from each well with a dedicated bailer. During purging of each observation well, pH, specific conductance, and temperature were measured. The probes were calibrated before (within 2 hours) taking the measurements. Specific conductance was measured using equivalent EPA standard method 9050. Temperature and pH were measured using a standard probe equivalent to EPA standard method 9040 or 150.1. Groundwater was sampled from the observation wells with a dedicated bailer when pH, specific conductance, and temperature parameters were stable. The pH, specific conductance, and temperature measurements recorded for each sample are summarized on Tables 1, 2, and 3.

GROUNDWATER LABORATORY ANALYSES

The groundwater samples were handled with clean, new, nitrile gloves and placed in laboratory supplied vials and bottles. The samples and a trip blank (distilled water) were stored on ice in a cooler and delivered to Accutest Laboratories (ACCUTEST) under chain-of-custody documentation. The groundwater samples collected from the observation wells were analyzed for calcium, magnesium, potassium, sodium, chloride, nitrate, nitrite, sulfate, TOC, bicarbonate, carbonate, BTEX, and TPH. Laboratory results are summarized on Tables 1, 2, and 3. Laboratory reports provided by ACCUTEST are included in Attachment I.

CONCLUSIONS

Groundwater samples were collected for laboratory analysis from the observation wells OW-1, OW-2, OW-3 and OW-4 on June 23, 2014. The analytical results for this monitoring event are consistent with the results from previous monitoring events except for benzene and sulfate. The sulfate concentration in observation well OW-1 was less than historical concentrations. Benzene was detected at a concentration of 45.5 ug/L in the sample collected from observation well OW-1. Benzene was also detected at a concentration of 2.6 ug/L in the sample collected from observation well OW-3. Finally, ethylbenzene was detected at concentration of 1.7 ug/L in the sample collected from observation well OW-1. In accordance with the Facility groundwater monitoring plan, a confirmatory sample was collected from BTEX analysis from observation well OW-1 on July 9, 2013 and from observation well OW-3 on July 16, 2014. Benzene was detected at a concentration of 12 ug/L in the confirmatory sample collected from observation well OW-1. BTEX compounds were not detected above the method detection limits in the confirmatory sample collected from observation well OW-3.

According to the groundwater monitoring plan, if BTEX compounds are detected in confirmatory samples, then the assessment monitoring is required. We recommend collecting groundwater samples for BTEX analysis from OW-1 on quarterly basis. We also recommend contacting EPA and CDPHE to determine what additional assessment monitoring, if any, will be required at the Facility. Finally, we recommend submitting a compare laboratory data from the observation wells to laboratory data from the production water

The next semi-annual groundwater monitoring event is scheduled for December 2014. Following the conclusion of the next semi-annual groundwater monitoring event, the data will be evaluated to determine if there is a significant change in groundwater elevation and/or quality (specifically sulfate concentrations in observation well OW-1).



Ms. Lara-Mesa
July 18, 2014
Page 3

If you have any questions or comments, please call.

Sincerely,

APEX CONSULTING SERVICES, INC.

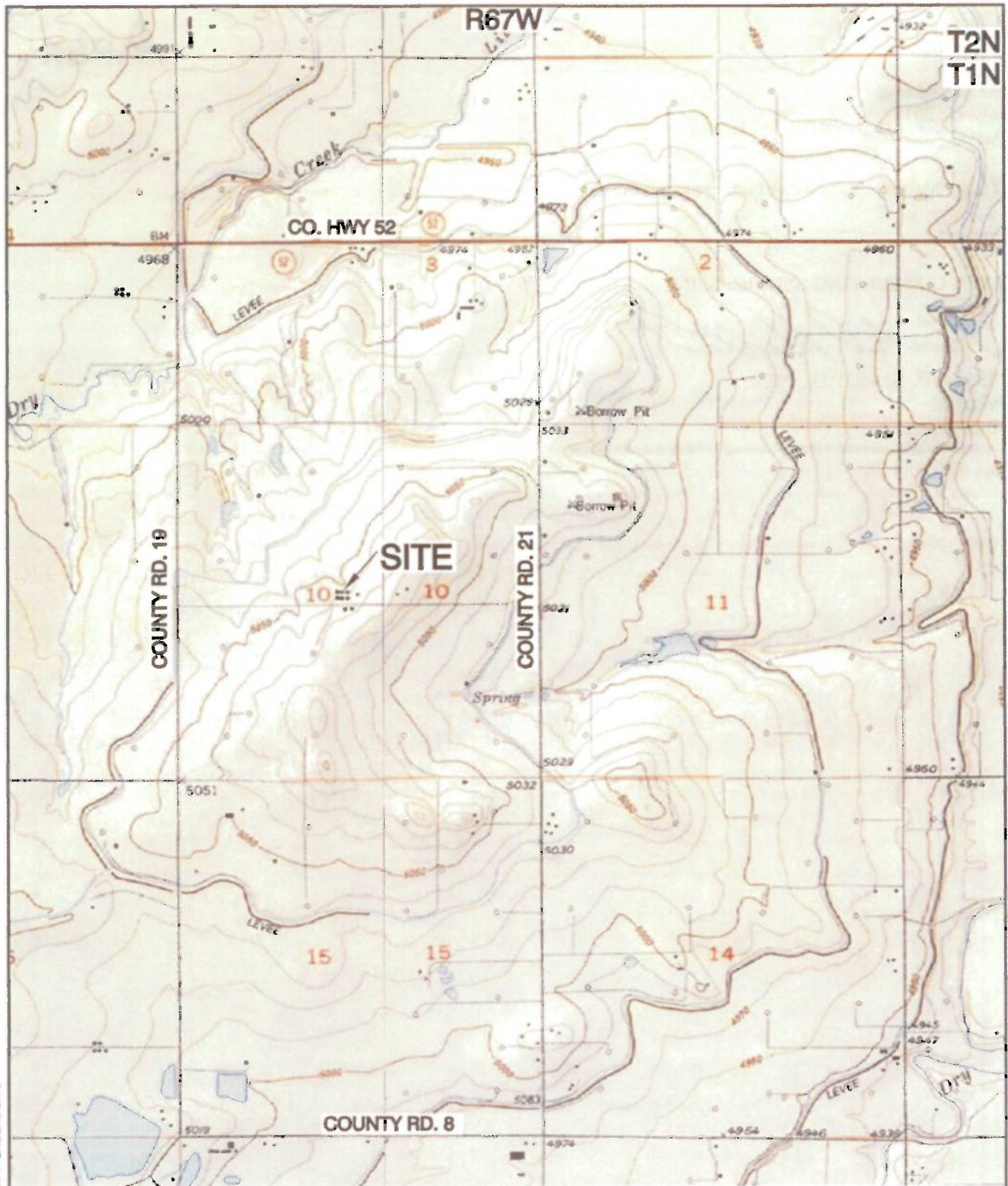
A handwritten signature in blue ink, reading 'Michael D. Hattel'.

Michael D. Hattel, P.G., P.E.S.

Principal

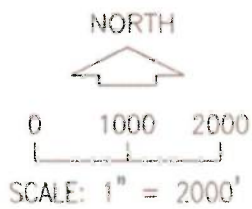
Attachments

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APEX JOB: 1-0025.001.00

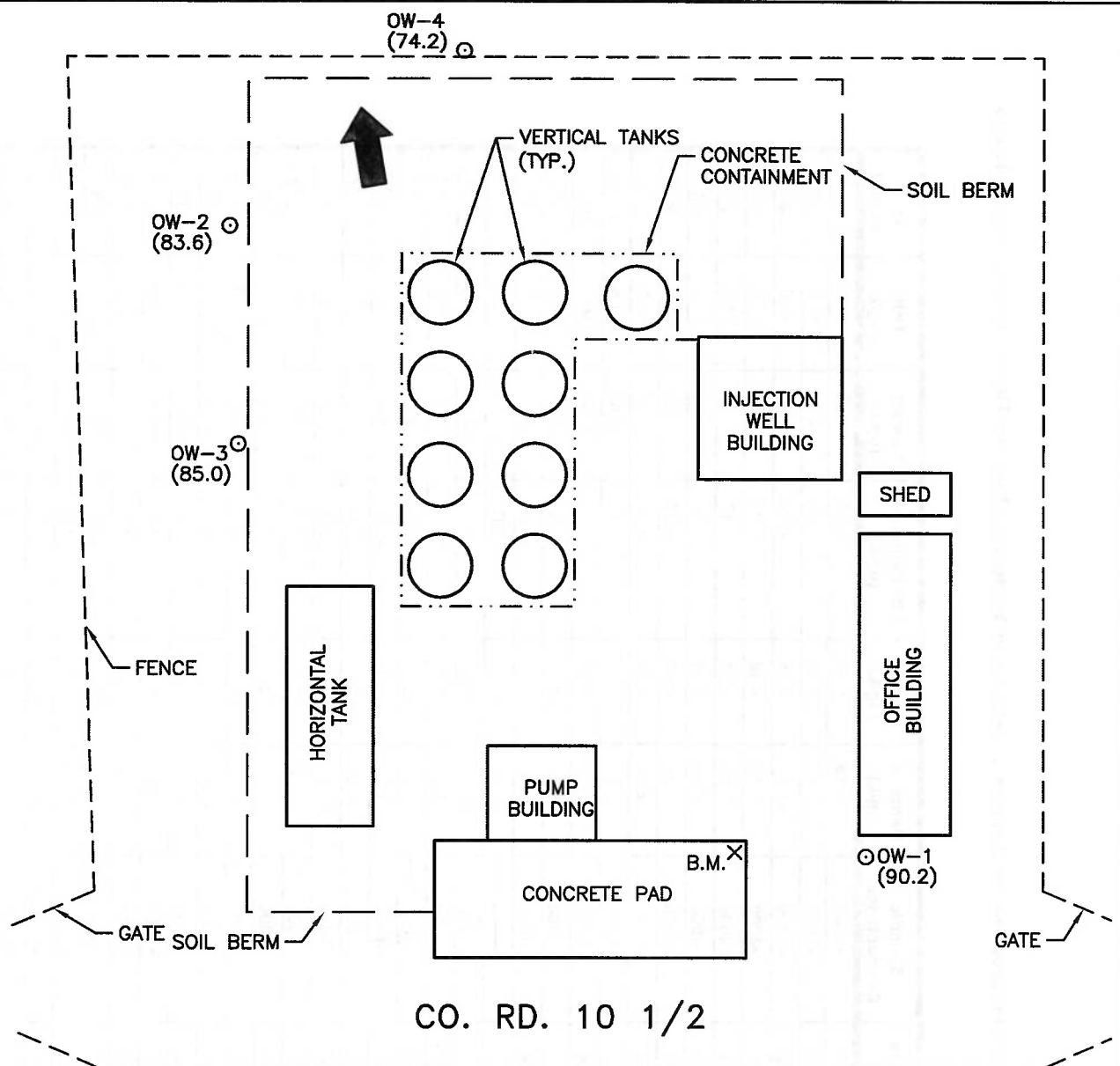


WATTENBERG DISPOSAL FACILITY
VICINITY MAP

APEX

FIGURE:

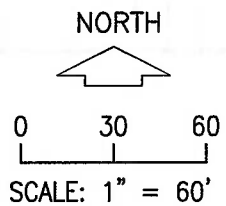
1



NOTE: DATA COLLECTED ON JUNE 23, 2014.

LEGEND:

- OBSERVATION WELL, NUMBER, AND RELATIVE GROUNDWATER ELEVATION
- OW-2 (83.6)
- ➔ CURRENT GROUNDWATER FLOW DIRECTION
- B.M. BENCH MARK, ELEVATION 100.00 FEET
- ND NO DATA



APEX JOB: 1-0025.001.00

WATTENBERG DISPOSAL FACILITY
SITE MAP
JUNE 23, 2014

APEX

FIGURE:

2

TABLE 1Summary of BTEX¹, TPH² and TOC³ Analytical Results for Groundwater Samples Collected from Wattenberg Disposal Facility, Weld County, Colorado

Sample	Date	pH	Temperature (Celsius)	Specific Conductance ³	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Xylenes (ug/L)	TPH (mg/L)	TOC ⁴ (mg/L)
OW-1	9/18/02	6.46	17.5	>4000	<.15	<.18	<.24	<.63	<1.6	79.0
	12/16/02	6.54	14.9	>4000	<.15	<.18	<.24	<.63	<1.6	29.0
	6/30/03	6.64	13.2	>4000	<1.5	<.18	<.24	<.63	<1.6	250.0
	12/30/03	6.54	14.1	>4000	<.15	<.18	<.24	<.63	<1.6	86.0
	6/30/04	6.19	13.2	>4000	<.18	<.21	<.17	<.96	<1.5	28.0
	12/29/04	6.30	12.9	>4000	<.18	<.21	<.17	<.96	<1.6	33.0
	6/30/05	6.60	13.2	>4000	<.07	<.07	<.07	<.20	<1.5	27.0
	12/28/05	6.85	15.5	>4000	<.07	<.07	<.08	<.20	<1.5	27.0
	6/29/06	6.54	13.5	>4000	1.00	<.07	1.1	5.00	<1.5	140.0
	7/27/06 ⁵	6.51	13.6	>4000	<.07	<.07	<.08	<.20	NA	NA
	1/25/07	6.81	13.3	>4000	<1.0	<2.0	<2.0	<4.0	5.3	28.7
	7/2/07	6.59	12.9	>4000	<1.0	<2.0	<2.0	<4.0	15.0	30.0
	1/31/08	6.69	12.9	>4000	<1.0	<2.0	<2.0	<4.0	<5.0	30.3
	6/24/08	6.52	12.3	>4000	<1.0	<2.0	<2.0	<4.0	<5.0	31.4
	12/29/08	6.50	14.7	>4000	<1.0	<2.0	<2.0	<4.0	6.2	30.1
	6/29/09	6.52	14.9	>4000	<1.0	<2.0	<2.0	<4.0	<5.0	30.8
	12/15/09	6.51	13.3	>4000	<1.0	<2.0	<2.0	<4.0	5.9	30.6
	6/23/10	6.61	12.4	>4000	<1.0	<2.0	<2.0	<4.0	5.0	31.8
	12/13/10	6.80	14.6	>4000	<1.0	<2.0	<2.0	<4.0	<5.0	31.7
	6/21/11	6.62	12.3	>4000	0.28	<1.0	<1.0	<2.0	7.1	29.2
	7/12/11	6.58	12.4	>4000	<1.0	<2.0	<2.0	<2.0	NA	NA
	12/21/11	6.56	13.8	>4000	1.00	<2.0	<2.0	<2.0	10.3	34.5
	1/13/12	6.55	14.0	>4000	<1.0	<2.0	<2.0	<2.0	NA	NA
	6/19/12	6.76	13.4	>4000	<2.0	<2.0	<2.0	<2.0	<4.9	33.3
	12/17/12	6.80	14.3	>4000	<0.2	<1.0	<1.0	<2.0	5.8	31.8
	06/13/13	6.65	12.6	>4000	1.70	<1.0	<1.0	<2.0	<5.2	26.2
	07/1/13	6.70	12.5	>4000	1.50	<1.0	<1.0	<2.0	NA	NA
	10/10/13	6.71	12.6	>4000	3.60	<1.0	<1.0	<2.0	NA	NA
	12/12/13	6.75	14.1	>4000	3.00	<1.0	<1.0	<2.0	<4.9	22.9
	6/23/14	6.68	12.7	>4000	45.50	<2.0	1.7J	<2.0	<4.8	42.8
	7/9/14	6.60	12.5	>4000	12.00	<1.0	<1.0	<2.0	NS	NS

TABLE 1Summary of BTEX¹, TPH² and TOC³ Analytical Results for Groundwater Samples Collected from Wattenberg Disposal Facility, Weld County, Colorado

Sample	Date	pH	Temperature (Celsius)	Specific Conductance ³	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Xylenes (ug/L)	TPH (mg/L)	TOC ⁴ (mg/L)
OW-2	9/18/02	7.05	14.8	>4000	<.15	<.18	<.24	<.63	<1.6	230.0
	12/16/02	7.09	14.0	>4000	<.15	<.18	<.24	<.63	<1.6	60.0
	6/30/03	7.28	12.9	>4000	<.15	<.18	<.24	<.63	<1.7	150.0
	12/30/03	7.23	13.3	>4000	<.15	<.18	<.24	<.63	<1.7	58.0
	6/30/04	6.86	13.0	>4000	<.18	<.21	<.17	<.96	<1.5	37.0
	12/29/04	6.80	12.3	>4000	<.18	<.21	<.17	<.96	<1.4	54.0
	6/30/05	7.18	12.5	>4000	<.07	<.07	<.07	<.20	<1.5	48.0
	12/28/05	7.23	14.5	>4000	<.07	<.07	<.07	<.20	<1.5	48.0
	6/29/06	7.22	12.9	>4000	<.07	<.07	<.08	<.20	<1.5	59.0
	1/25/07	7.37	12.8	>4000	<1.0	<2.0	<2.0	<4.0	<5.0	44.4
	7/2/07	7.18	13.3	>4000	<1.0	<2.0	<2.0	<4.0	<5.0	36.7
	1/31/08	7.27	12.6	>4000	<1.0	<2.0	<2.0	<4.0	<5.0	43.0
	6/24/08	7.18	12.1	>4000	<1.0	<2.0	<2.0	<4.0	<5.0	47.1
	12/29/08	7.13	14.0	>4000	<1.0	<2.0	<2.0	<4.0	<4.0	45.4
	6/29/09	7.15	14.2	>4000	<1.0	<2.0	<2.0	<4.0	5.7	43.9
	12/15/09	7.11	13.0	>4000	<1.0	<2.0	<2.0	<4.0	<5.0	43.1
	6/23/10	7.30	12.4	>4000	<1.0	<2.0	<2.0	<4.0	<5.0	43.5
	12/13/10	7.14	13.6	>4000	<1.0	<2.0	<2.0	<4.0	<5.0	44.5
	6/21/11	7.19	12.5	>4000	<0.2	<1.0	<1.0	<2.0	4.9	37.2
	12/21/11	7.21	12.5	>4000	0.25	<2.0	<2.0	<2.0	12.8	46.4
	1/13/12	7.20	13.0	>4000	<1.0	<2.0	<2.0	<2.0	NA	NA
	6/19/12	7.30	12.4	>4000	<1.0	<2.0	<2.0	<2.0	<4.8	45.4
	12/17/12	7.34	13.2	>4000	<0.2	<1.0	<1.0	<2.0	<4.8	46.2
	6/13/13	7.15	12.5	>4000	<0.2	<1.0	<1.0	<2.0	<4.9	46.2
	12/12/13	7.35	13.8	>4000	<0.2	<1.0	<1.0	<2.0	<4.9	42.6
	6/23/14	7.10	12.5	>4000	<0.2	<1.0	<1.0	<2.0	<4.9	33.6
OW-3	9/18/02	6.88	15.4	>4000	<.15	<.18	<.24	<.63	<5.1	95.0
	12/16/02	7.08	15.3	>4000	<.15	<.18	<.24	<.63	<1.6	63.0
	6/30/03	7.05	14.6	>4000	<.15	<.18	<.24	<.63	<1.6	200.0
	12/30/03	7.27	13.4	>4000	<.15	<.18	<.24	<.63	<1.8	85.0
	6/30/04	6.89	12.4	>4000	3.5	1.3	<.17	<.96	<2.0	68.0
	9/9/04 ⁵	6.86	13.5	>4000	<.18	<.17	<.17	<.96	NA	NA

TABLE 1Summary of BTEX¹, TPH² and TOC³ Analytical Results for Groundwater Samples Collected from Wattenberg Disposal Facility, Weld County, Colorado

Sample	Date	pH	Temperature (Celsius)	Specific Conductance ³	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Xylenes (ug/L)	TPH (mg/L)	TOC ⁴ (mg/L)
	12/29/04	6.65	12.3	>4000	<.18	<.21	<.17	<.96	<1.5	78.0
	6/30/05	6.90	12.5	>4000	<.07	<.07	<.09	<.20	<1.6	80.0
	12/28/05	7.12	15.2	>4000	<.07	<.07	<.09	<.20	<1.5	92.0
	6/29/06	7.59	15.8	>4000	<.07	<.07	<.09	<.20	<1.5	82.0
	1/25/07	7.47	12.7	>4000	<1.0	<2.0	<2.0	<4.0	<5.0	62.9
	7/2/07	6.90	13.7	>4000	1500	71000	19000	178000	NA	NA
	1/31/08	NS	NS	NS	NS	NS	NS	NS	NS	NS
	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	1/05/09	7.05	14.0	>4000	<1.0	<2.0	<2.0	<4.0	<5.0	53.0
	6/29/09	7.15	14.1	>4000	1.0	<2.0	<2.0	<4.0	5.0	43.5
	7/27/09	7.11	14.2	>4000	NA	NA	NA	NA	NA	NA
	12/15/09	7.17	13.0	>4000	1.6	<2.0	<2.0	<4.0	<6.33	46.4
	1/04/10	7.15	13.2	>4000	<1.0	<2.0	<2.0	<4.0	NA	NA
	6/23/10	7.35	12.3	>4000	<1.0	<2.0	<2.0	<4.0	<13.0	44.8
	12/13/10	7.05	13.2	>4000	<1.0	<2.0	<2.0	<4.0	7.6	45.0
	6/21/11	7.19	12.3	>4000	1.4	<1.0	<1.0	<2.0	<6.2	40.1
	7/12/11	7.15	12.4	>4000	<1.0	<1.0	<1.0	<1.0	NA	NA
	12/21/11	7.20	12.0	>4000	1.3	<2.0	<2.0	<2.0	7.3	45.9
	1/13/12	7.15	11.9	>4000	<1.0	<2.0	<2.0	<2.0	NA	NA
	6/19/12	7.41	13.3	>4000	<1.0	<2.0	<2.0	<2.0	<5.0	40.5
	12/17/12	7.33	13.5	>4000	<0.2	<1.0	<1.0	<2.0	<5.0	37.3
	6/13/13	7.20	12.3	>4000	2.70	<1.0	<1.0	<2.0	<5.4	37.3
	7/01/13	7.15	12.3	>4000	<0.2	<1.0	<1.0	<2.0	NA	NA
	12/12/13	7.03	13.3	>4000	<0.2	<1.0	<1.0	<2.0	<5.0	36.0
	6/23/14	7.19	12.4	>4000	2.60	<1.0	<1.0	<2.0	<5.0	32.8
	7/17/14	7.11	12.5	>4000					NS	NS
OW-4	12/15/09	7.14	12.9	>4000	<1.0	<2.0	<2.0	<4.0	NA	68.9
	6/23/10	7.17	13.5	>4000	<1.0	<2.0	<2.0	<4.0	<7.4	78.4
	12/13/10	7.18	13.1	>4000	<1.0	<2.0	<2.0	<4.0	<11	69.9
	6/21/11	7.23	12.2	>4000	<0.2	<1.0	<1.0	<2.0	<6.4	68.1
	12/21/11	7.12	11.7	>4000	<0.2	<2.0	<2.0	<2.0	8.1	73.8

TABLE 1Summary of BTEX¹, TPH² and TOC³ Analytical Results for Groundwater Samples Collected from Wattenberg Disposal Facility, Weld County, Colorado

Sample	Date	pH	Temperature (Celsius)	Specific Conductance ³	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Xylenes (ug/L)	TPH (mg/L)	TOC ⁴ (mg/L)
OW-4	6/19/12	7.41	14.0	>4000	<1.0	<2.0	<2.0	<2.0	<5.2	71.3
(Cont.)	12/17/12	7.33	12.7	>4000	<0.2	<1.0	<1.0	<2.0	<6.3	70.5
	6/13/13	7.25	12.3	>4000	<0.2	<1.0	<1.0	<2.0	<7.4	68.3
	12/12/13	7.29	12.9	>4000	<0.2	<1.0	<1.0	<2.0	<5.3	64.8
	6/23/14	7.21	12.4	>4000	<0.2	<1.0	<1.0	<2.0	<6.8	65.8

- 1 Benzene, toluene, ethylbenzene, and total xylenes by Method 8021B.
2 Total petroleum hydrocarbons by Method 1664.
3 Specific conductance in micro-siemens at 25 degrees Celsius.
4 Total organic carbon by Method 415.1.
5 Second sample collected in accordance with ground water monitoring plan.

J Estimated value.
mg/L milligrams per liter.
NA Not Analyzed
ug/L micrograms per liter.
NS No Sample

TABLE 2 (continued)

Summary of Major Cation¹ Analytical Results for Groundwater Samples Collected from Wattenberg Disposal Facility, Weld County, Colorado

Sample	Date	pH	Temperature (Celsius)	Specific Conductance ²	Calcium (mg/L)	Magnesium (mg/L)	Potassium (mg/L)	Sodium (mg/L)
OW-3	1/25/07	7.47	12.7	>4000	510	640	24	3700
(Cont.)	7/2/07	6.90	13.7	>4000	NA	NA	NA	NA
	1/31/08	NS	NS	NS	NS	NS	NS	NS
	6/24/08	NS	NS	NS	NS	NS	NS	NS
	1/05/09	7.05	14.0	>4000	500	630	20	4400
	6/29/09	7.15	14.1	>4000	520	570	17	4200
	12/15/09	7.17	13.0	>4000	460	630	26	3900
	6/23/10	7.35	12.3	>4000	564	695	<50	4310
	12/13/10	7.05	13.2	>4000	512	639	18.9	4030
	6/21/11	7.19	12.3	>4000	422	511	15.5	3130
	12/11/11	7.20	12.0	>4000	455	596	18.0	3960
	6/19/12	7.41	13.3	>4000	447	528	16.8	3530
	12/17/12	7.33	13.5	>4000	466	596	18.9	3520
	6/13/13	7.20	12.3	>4000	412	491	23.8	3790
	12/12/13	7.03	13.3	>4000	426	419	15.9	3030
	6/23/14	7.19	12.4	>4000	411	442	15.1	2590
OW-4	12/15/09	7.14	12.9	>4000	500	600	29	3800
	6/23/10	7.17	13.5	>4000	602	617	<50	4610
	12/13/10	7.18	13.1	>4000	497	583	21.4	3800
	6/21/11	7.23	12.2	>4000	501	559	21	3890
	12/21/11	7.12	11.7	>4000	507	578	22	3910
	6/19/12	7.41	14.0	>4000	504	539	17.9	3740
	12/17/12	7.33	12.7	>4000	519	632	21.5	3950
	6/13/13	7.25	12.3	>4000	475	508	26.8	4100
	12/12/13	7.29	12.9	>4000	510	532	22.4	3700
	6/23/14	7.21	12.4	>4000	510	537	20.8	3310

¹ By Method 6010B.

B Analyte detected in blank

² Specific conductance in micro-siemens at 25 degrees Celsius.

mg/L milligrams per liter.

NS No Sample

TABLE 3

Summary of Major Anion Analytical Results for Groundwater Samples Collected from Wattenberg Disposal Facility, Weld County, Colorado

Sample	Date	pH	Temperature (Celsius)	Specific Conductance ¹	Bicarbonate (mg/L)	Carbonate (mg/L)	Nitrate as N ³ (mg/L)	Nitrite as N ³ (mg/L)	Sulfate ³ (mg/L)	Chloride ³ (mg/L)
OW-1	9/18/02	6.46	17.5	>4000	890	<1	<.36	<.34	2500	3300
	12/16/02	6.54	14.9	>4000	880	<1	<1.4	<1.3	2400	3800
	6/30/03	6.64	13.2	>4000	NS	NS	<1.8	<2.5	1900	3400
	12/30/03	6.54	14.1	>4000	880	<1.2	<0.01	<0.02	2300	1000
	6/30/04	6.19	13.2	>4000	780	<1.2	<0.02	<0.02	2100	3800
	12/29/04	6.30	12.9	>4000	840	<3.4	<0.07	<0.04	2100	3400
	6/30/05	6.73	13.2	>4000	850	<1.2	<0.02	<0.02	2400	3900
	12/28/05	6.85	15.5	>4000	860	<1.2	<0.02	<0.02	2600	4500
	6/29/06	6.54	13.5	>4000	850	<1.2	<0.02	<0.02	2700	4800
	1/25/07	6.81	13.3	>4000	1000	<5.0	<0.56	<0.76	2030	3880
	7/2/07	6.59	12.9	>4000	976	<5.0	<0.10	<0.40	1970	3940
	1/31/08	6.69	12.9	>4000	977	<5.0	<0.25	<0.40	1870	4210
	6/24/08	6.52	12.3	>4000	936	<5.0	<2.3	<6.1	1830	4400
	12/29/08	6.50	14.7	>4000	754	<5.0	<.45	<15	1730	9070
	6/29/09	6.52	14.9	>4000	763	<5.0	<.90	<3.1	1690	4690
	12/15/09	6.51	13.3	>4000	742	<5.0	<1.5	<1.5	1640	4880
	6/23/10	6.61	12.4	>4000	707	<5.0	<0.90	<6.1	1650	4780
	12/13/10	6.80	14.6	>4000	740	<5.0	<0.90	<15	1740	5080
	6/21/11	6.62	12.3	>4000	705	<5.0	<0.45	<15	1680	4650
	12/21/11	6.56	13.8	>4000	803	<5.0	<0.90	<6.1	1660	4150
OW-2	6/19/12	6.76	13.4	>4000	822	<5.0	<0.90	<2.5	1790	4170
	12/17/12	6.80	14.3	>4000	792	<5.0	<0.20	<0.4	1890	4120
	6/13/13	6.65	12.6	>4000	972	<5.0	<0.50	<0.2	2260	2480
	12/12/13	6.75	12.5	>4000	888	<5.0	<0.10	<0.04	2000	2090
	6/23/14	6.68	12.7	>4000	1070	<5.0	<0.10	<0.04	281	1600
	9/18/02	7.05	14.8	>4000	1100	<1	13	<.84	5200	5300
	12/16/02	7.09	14.0	>4000	1100	<1	5	<1.7	4700	5800
	6/30/03	7.28	12.9	>4000	NS	NS	16	<2.5	5300	4200
	12/30/03	7.23	13.3	>4000	1100	<1.2	16	<0.09	5200	4500
	6/30/04	6.86	13.0	>4000	960	<1.2	16	<0.25	5700	5000

TABLE 3 (continued)

Summary of Major Anion Analytical Results for Groundwater Samples Collected from Wattenberg Disposal Facility, Weld County, Colorado

Sample	Date	pH	Temperature (Celsius)	Specific Conductance ¹	Bicarbonate (mg/L)	Carbonate (mg/L)	Nitrate as N ³ (mg/L)	Nitrite as N ³ (mg/L)	Sulfate ³ (mg/L)	Chloride ³ (mg/L)
OW-2	12/29/04	6.80	12.3	>4000	1000	<3.4	13	<0.04	5000	4300
(cont)	6/30/05	7.18	12.5	>4000	1100	<1.2	12	<0.25	5800	4500
	12/28/05	7.23	14.5	>4000	1000	<1.2	14	16	5600	5400
	6/29/06	7.22	12.9	>4000	970	<1.2	9	<0.25	5600	6100
	1/25/07	7.37	12.8	>4000	1210	<5.0	7.1	<1.9	4930	5000
	7/2/07	7.18	13.3	>4000	1190	<5.0	9	<1.0	5270	4790
	1/31/08	7.27	12.6	>4000	1200	<5.0	6.6	<.40	4640	4500
	6/24/08	7.18	12.1	>4000	1170	<5.0	4.26	<6.1	4400	5200
	12/29/08	7.13	14.0	>4000	950	<5.0	7.8	<15	4830	4940
	6/29/09	7.15	14.2	>4000	931	<5.0	7.2	<6.1	4900	5070
	12/15/09	7.11	13.0	>4000	930	<5.0	12.2	<1.5	6240	4230
	6/23/10	7.30	12.4	>4000	904	<5.0	6.4	<15.0	4960	5160
	12/13/10	7.14	13.6	>4000	930	<5.0	7.9	<15.0	6160	5750
	6/21/11	7.19	12.5	>4000	948	<5.0	5.7	<15.0	4740	4870
	12/21/11	7.21	12.5	>4000	986	<5.0	8.8	<6.1	5270	4740
	6/19/12	7.30	12.4	>4000	951	<5.0	4.3	<2.5	4730	4890
	12/17/12	7.34	13.2	>4000	950	<5.0	7.1	<1.0	5520	5060
	6/13/13	7.15	12.5	>4000	982	<5.0	5.9	<0.8	5170	4840
	12/12/13	7.35	13.8	>4000	944	<5.0	9.5	<0.08	5500	4320
	6/23/14	7.10	12.5	>4000	937	<5.0	7.9	<0.20	4700	4000
OW-3	9/18/02	6.88	15.4	>4000	NS	NS	NS	NS	NS	NS
	12/16/02	7.08	15.3	>4000	1100	<1	<1.8	<1.7	8400	3800
	6/30/03	7.13	14.6	>4000	NS	NS	2.0J	<2.5	6100	3800
	12/30/03	7.27	13.4	>4000	1200	<1.2	0.24	<0.09	6300	1200
	6/30/04	6.89	12.4	>4000	920	<1.2	0.20	<0.02	5400	4900
	12/29/04	6.65	12.3	>4000	1100	<3.4	<0.07	<0.07	6700	3200
	6/30/05	6.90	12.5	>4000	1100	<1.2	<0.28	<0.25	8000	3800
	12/28/05	7.12	15.2	>4000	1100	<1.2	6.2	11	6800	3800
	6/29/06	6.54	13.5	>4000	1100	<1.2	2.7	<0.25	680	4800
	1/25/07	7.47	12.7	>4000	1100	<5.0	<1.4	<1.9	5900	4750

TABLE 3 (continued)

Summary of Major Anion Analytical Results for Groundwater Samples Collected from Wattenberg Disposal Facility, Weld County, Colorado

Sample	Date	pH	Temperature (Celsius)	Specific Conductance ¹	Bicarbonate (mg/L)	Carbonate (mg/L)	Nitrate as N ³ (mg/L)	Nitrite as N ³ (mg/L)	Sulfate ³ (mg/L)	Chloride ³ (mg/L)
OW-3	7/2/07	6.9	13.7	>4000	NA	NA	NA	NA	NA	NA
(Cont)	1/31/08	NS	NS	NS	NS	NS	NS	NS	NS	NS
	6/24/08	NS	NS	NS	NS	NS	NS	NS	NS	NS
	1/05/09	7.05	14.0	>4000	1200	<5.0	4.3	1.9	6100	4390
	6/29/09	7.15	14.1	>4000	919	<5.0	7.4	<6.1	5010	4970
	12/15/09	7.17	13.0	>4000	920	<5.0	6.2	<1.5	4740	5050
	6/23/10	7.35	12.3	>4000	960	<5.0	8.0	<6.1	5960	3920
	12/13/10	7.05	13.2	>4000	960	<5.0	9.5	<15.0	5960	4690
	6/21/11	7.19	12.3	>4000	973	<5.0	4.0	<15.0	5100	3490
	12/21/11	7.20	12.0	>4000	988	<5.0	4.1	<6.1	5620	3650
	6/19/12	7.40	13.3	>4000	959	<5.0	8.8	<2.5	5690	3560
	12/17/12	7.33	13.5	>4000	1030	<5.0	0.57	0.21	5810	3440
	6/13/13	7.20	12.3	>4000	973	<5.0	11.2	1.1	5820	3490
	12/12/13	7.03	13.3	>4000	908	<5.0	0.7	0.09	4550	2770
	6/23/14	7.19	12.4	>4000	919	<5.0	9.6	2.9	4990	2960
OW-4	12/15/09	7.14	12.9	>4000	276	<5.0	89.3	<1.5	6450	4350
	6/23/10	7.17	13.5	>4000	257	<5.0	80.2	<6.1	6650	3580
	12/13/10	7.18	13.1	>4000	300	<5.0	69.1	<15.0	7880	3840
	6/21/11	7.23	12.2	>4000	262	<5.0	71.0	<15.0	6880	3690
	12/21/11	7.12	11.7	>4000	322	<5.0	69.9	<6.1	7210	3430
	6/19/12	7.41	14.0	>4000	261	<5.0	87.5	<2.5	6990	3920
	12/17/12	7.33	12.7	>4000	262	<5.0	78.7	<0.08	7390	3780
	6/13/13	7.25	12.3	>4000	248	<5.0	97.0	<0.8	6980	4120
	12/12/13	7.29	12.9	>4000	348	<5.0	49.3	<0.08	7560	2810
	6/23/14	7.21	12.4	>4000	284	<5.0	75.4	<0.20	6920	3270

1 Specific conductance in micro-siemens at 25 degrees Celsius.

2 By Method 310.1.

3 By Method 300.

J Analyte was detected above the Reporting Limit but below the Quantitation Limit.

mg/L milligrams per liter.

NS No sample.

ATTACHMENT I



07/07/14

Technical Report for

K.P. Kauffman Company, Inc.

Wattenberg GW

PO# 7591

Accutest Job Number: D59055

Sampling Date: 06/23/14

Report to:

Apex Consulting Services
PO Box 369
Louisville, CO 80027-0369
mhattel@msn.com; slaramesa@kpk.com
ATTN: Susana Lara-Mesa

Total number of pages in report: 43



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Scott Heideman
Laboratory Director

Client Service contact: Renea Jackson 303-425-6021

Certifications: CO (CO00049), ID, NE (CO00049), ND (R-027), NJ (CO 0007), OK (D9942), UT (NELAP CO00049), TX (T104704511)

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Test results relate only to samples analyzed.

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Sample Summary

K.P. Kauffman Company, Inc.

Job No: D59055

Wattenberg GW
Project No: PO# 7591

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
D59055-1	06/23/14	08:45 MH	06/23/14	AQ	Ground Water	OW-1
D59055-1F	06/23/14	08:45 MH	06/23/14	AQ	Groundwater Filtered	OW-1
D59055-2	06/23/14	07:50 MH	06/23/14	AQ	Ground Water	OW-2
D59055-2F	06/23/14	07:50 MH	06/23/14	AQ	Groundwater Filtered	OW-2
D59055-3	06/23/14	07:00 MH	06/23/14	AQ	Ground Water	OW-3
D59055-3F	06/23/14	07:00 MH	06/23/14	AQ	Groundwater Filtered	OW-3
D59055-4	06/23/14	06:05 MH	06/23/14	AQ	Ground Water	OW-4
D59055-4F	06/23/14	06:05 MH	06/23/14	AQ	Groundwater Filtered	OW-4



CASE NARRATIVE / CONFORMANCE SUMMARY

Client: K.P. Kauffman Company, Inc.

Job No D59055

Site: Wattenberg GW

Report Date 7/7/2014 3:23:44 PM

On 06/23/2014, 4 sample(s), 0 Trip Blank(s), and 0 Field Blank(s) were received at Accutest Mountain States (AMS) at a temperature of 6.9 °C. The samples were intact and properly preserved, unless noted below. An AMS Job Number of D59055 was assigned to the project. The lab sample ID, client sample ID, and date of sample collection are detailed in the report's Results Summary.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

Volatiles by GC By Method SW846 8021B

Matrix AQ	Batch ID: GTA1257
------------------	--------------------------

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D59055-1MS, D59055-1MSD were used as the QC samples indicated.
- The matrix spike (MS) recovery(s) and matrix spike duplicate (MSD) recovery(s) of Benzene are outside control limits. Outside control limits due to possible matrix interference.

Metals By Method SW846 6010C

Matrix AQ	Batch ID: MP13281
------------------	--------------------------

- All samples were digested and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D58834-1FMS, D58834-1FMSD, D58834-1FSDL were used as the QC samples for the metals analysis.

Wet Chemistry By Method ASTM D287

Matrix ALL	Batch ID: GN25366
-------------------	--------------------------

- The data for ASTM D287 meets quality control requirements.

Wet Chemistry By Method EPA 1664A

Matrix AQ	Batch ID: GP12969
------------------	--------------------------

- All samples were prepared and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.

Wet Chemistry By Method EPA 300.0/SW846 9056

Matrix AQ	Batch ID: GP12887
------------------	--------------------------

- All samples were prepared and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D59055-4MS were used as the QC samples for the Chloride, Nitrogen, Nitrate, Nitrogen, Nitrite, Sulfate analysis.
- D59055-1 for Nitrogen, Nitrate: Elevated detection limit due to matrix interference.
- D59055-4 for Nitrogen, Nitrite: Elevated detection limit due to matrix interference.
- D59055-1 for Nitrogen, Nitrite: Elevated detection limit due to matrix interference.
- D59055-2 for Nitrogen, Nitrite: Elevated detection limit due to matrix interference.

Monday, July 07, 2014

Page 1 of 2

Wet Chemistry By Method SM 2320B-2011

Matrix AQ	Batch ID: GN25283
------------------	--------------------------

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D59045-2MS, D59045-2MSD, D59055-2DUP were used as the QC samples for the Alkalinity, Total as CaCO₃ analysis.

Matrix AQ	Batch ID: GN25284
------------------	--------------------------

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.

Matrix AQ	Batch ID: GN25285
------------------	--------------------------

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.

Wet Chemistry By Method SM 2540C-2011

Matrix AQ	Batch ID: GN25298
------------------	--------------------------

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D59056-1DUP were used as the QC samples for the Solids, Total Dissolved analysis.

Wet Chemistry By Method SM 5310B-2011

Matrix AQ	Batch ID: GP12920
------------------	--------------------------

- All samples were prepared and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D59118-1MS, D59118-1MSD, D59118-2DUP were used as the QC samples for the Total Organic Carbon analysis.

Matrix AQ	Batch ID: GP12944
------------------	--------------------------

- All samples were prepared and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D59176-1MS, D59176-1MSD, D59176-2DUP were used as the QC samples for the Total Organic Carbon analysis.

AMS certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting AMS's Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

AMS is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. This report is authorized by AMS indicated via signature on the report cover.

Summary of Hits

Page 1 of 2

Job Number: D59055
 Account: K.P. Kauffman Company, Inc.
 Project: Wattenberg GW
 Collected: 06/23/14

Lab Sample ID	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
D59055-1	OW-1					
Benzene		45.5	1.0	0.20	ug/l	SW846 8021B
Ethylbenzene		1.7 J	2.0	1.0	ug/l	SW846 8021B
Alkalinity, Bicarbonate as CaCO3		1070	5.0		mg/l	SM 2320B-2011
Alkalinity, Total as CaCO3		1070	5.0		mg/l	SM 2320B-2011
Chloride		1600	50		mg/l	EPA 300.0/SW846 9056
Solids, Total Dissolved		4240	10		mg/l	SM 2540C-2011
Specific Gravity by Hydrometer		1.0039				ASTM D287
Sulfate		281	5.0		mg/l	EPA 300.0/SW846 9056
Total Organic Carbon		42.8	5.0		mg/l	SM 5310B-2011
pH		7.20			su	SM4500HB + -2011/9040C
D59055-1F	OW-1					
Calcium		116000	400		ug/l	SW846 6010C
Magnesium		144000	200		ug/l	SW846 6010C
Potassium		4320	1000		ug/l	SW846 6010C
Sodium		1170000	4000		ug/l	SW846 6010C
D59055-2	OW-2					
Alkalinity, Bicarbonate as CaCO3		937	5.0		mg/l	SM 2320B-2011
Alkalinity, Total as CaCO3		937	5.0		mg/l	SM 2320B-2011
Chloride		4000	100		mg/l	EPA 300.0/SW846 9056
Nitrogen, Nitrate		7.9	0.50		mg/l	EPA 300.0/SW846 9056
Solids, Total Dissolved		14800	10		mg/l	SM 2540C-2011
Sulfate		4700	100		mg/l	EPA 300.0/SW846 9056
Total Organic Carbon		33.6	5.0		mg/l	SM 5310B-2011
D59055-2F	OW-2					
Calcium		476000	400		ug/l	SW846 6010C
Magnesium		535000	200		ug/l	SW846 6010C
Potassium		15900	1000		ug/l	SW846 6010C
Sodium		3030000	4000		ug/l	SW846 6010C
D59055-3	OW-3					
Benzene		2.6	1.0	0.20	ug/l	SW846 8021B
Alkalinity, Bicarbonate as CaCO3		919	5.0		mg/l	SM 2320B-2011
Alkalinity, Total as CaCO3		919	5.0		mg/l	SM 2320B-2011
Chloride		2960	250		mg/l	EPA 300.0/SW846 9056
Nitrogen, Nitrate		9.6	0.20		mg/l	EPA 300.0/SW846 9056
Nitrogen, Nitrite		2.9	0.080		mg/l	EPA 300.0/SW846 9056

Summary of Hits

Page 2 of 2

Job Number: D59055
Account: K.P. Kauffman Company, Inc.
Project: Wattenberg GW
Collected: 06/23/14

Lab Sample ID	Client Sample ID	Result/ Analyte Qual	RL	MDL	Units	Method
		Solids, Total Dissolved	12800	10	mg/l	SM 2540C-2011
		Sulfate	4990	250	mg/l	EPA 300.0/SW846 9056
		Total Organic Carbon	32.8	5.0	mg/l	SM 5310B-2011
D59055-3F	OW-3					
		Calcium	411000	400	ug/l	SW846 6010C
		Magnesium	442000	200	ug/l	SW846 6010C
		Potassium	15100	1000	ug/l	SW846 6010C
		Sodium	2590000	4000	ug/l	SW846 6010C
D59055-4	OW-4					
		Alkalinity, Bicarbonate as CaCO3	284	5.0	mg/l	SM 2320B-2011
		Alkalinity, Total as CaCO3	284	5.0	mg/l	SM 2320B-2011
		Chloride	3270	250	mg/l	EPA 300.0/SW846 9056
		Nitrogen, Nitrate	75.4	5.0	mg/l	EPA 300.0/SW846 9056
		Solids, Total Dissolved	16900	10	mg/l	SM 2540C-2011
		Sulfate	6920	250	mg/l	EPA 300.0/SW846 9056
		Total Organic Carbon	65.8	5.0	mg/l	SM 5310B-2011
D59055-4F	OW-4					
		Calcium	510000	400	ug/l	SW846 6010C
		Magnesium	537000	200	ug/l	SW846 6010C
		Potassium	20800	1000	ug/l	SW846 6010C
		Sodium	3310000	4000	ug/l	SW846 6010C

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	OW-1	Date Sampled:	06/23/14
Lab Sample ID:	D59055-1	Date Received:	06/23/14
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8021B		
Project:	Wattenberg GW		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	TA22506.D	1	07/03/14	EV	n/a	n/a	GTA1257
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	45.5	1.0	0.20	ug/l	
108-88-3	Toluene	ND	2.0	1.0	ug/l	
100-41-4	Ethylbenzene	1.7	2.0	1.0	ug/l	J
1330-20-7	Xylenes (total)	ND	2.0	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
120-82-1	1,2,4-Trichlorobenzene	118%		60-140%

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: OW-1
 Lab Sample ID: D59055-1
 Matrix: AQ - Ground Water
 Project: Wattenberg GW

Date Sampled: 06/23/14
 Date Received: 06/23/14
 Percent Solids: n/a

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Bicarbonate as CaC	1070	5.0	mg/l	1	06/25/14	JD	SM 2320B-2011
Alkalinity, Carbonate	< 5.0	5.0	mg/l	1	06/25/14	JD	SM 2320B-2011
Alkalinity, Total as CaCO ₃	1070	5.0	mg/l	1	06/25/14	JD	SM 2320B-2011
Chloride	1600	50	mg/l	100	06/23/14 15:06	SK	EPA 300.0/SW846 9056
HEM Oil and Grease	< 4.8	4.8	mg/l	1	07/07/14	SWT	EPA 1664A
Nitrogen, Nitrate ^a	< 0.10	0.10	mg/l	10	06/23/14 12:54	SK	EPA 300.0/SW846 9056
Nitrogen, Nitrite ^a	< 0.040	0.040	mg/l	10	06/23/14 12:54	SK	EPA 300.0/SW846 9056
Solids, Total Dissolved	4240	10	mg/l	1	06/26/14	JD	SM 2540C-2011
Specific Gravity by Hydromete	1.0039			1	07/01/14	MM	ASTM D287
Sulfate	281	5.0	mg/l	10	06/23/14 12:54	SK	EPA 300.0/SW846 9056
Total Organic Carbon	42.8	5.0	mg/l	5	06/30/14 13:29	SK	SM 5310B-2011
pH	7.20		su	1	06/23/14 14:40	SK	SM4500HB+-2011/9040C

(a) Elevated detection limit due to matrix interference.

RL = Reporting Limit

Report of Analysis

Client Sample ID:	OW-1	Date Sampled:	06/23/14
Lab Sample ID:	D59055-1F	Date Received:	06/23/14
Matrix:	AQ - Groundwater Filtered	Percent Solids:	n/a
Project:	Wattenberg GW		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Calcium	116000	400	ug/l	1	06/26/14	06/27/14 KV	SW846 6010C ¹	SW846 3010A ³
Magnesium	144000	200	ug/l	1	06/26/14	06/27/14 KV	SW846 6010C ¹	SW846 3010A ³
Potassium	4320	1000	ug/l	1	06/26/14	06/27/14 KV	SW846 6010C ¹	SW846 3010A ³
Sodium	1170000	4000	ug/l	10	06/26/14	06/30/14 KV	SW846 6010C ²	SW846 3010A ³

(1) Instrument QC Batch: MA4933

(2) Instrument QC Batch: MA4938

(3) Prep QC Batch: MP13281

RL = Reporting Limit

Report of Analysis

Client Sample ID: OW-2
 Lab Sample ID: D59055-2
 Matrix: AQ - Ground Water
 Method: SW846 8021B
 Project: Wattenberg GW

Date Sampled: 06/23/14
 Date Received: 06/23/14
 Percent Solids: n/a

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	TA22512.D	1	07/03/14	EV	n/a	n/a	GTA1257
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.20	ug/l	
108-88-3	Toluene	ND	2.0	1.0	ug/l	
100-41-4	Ethylbenzene	ND	2.0	1.0	ug/l	
1330-20-7	Xylenes (total)	ND	2.0	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
120-82-1	1,2,4-Trichlorobenzene	118%		60-140%

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	OW-2	Date Sampled:	06/23/14
Lab Sample ID:	D59055-2	Date Received:	06/23/14
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Project:	Wattenberg GW		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Bicarbonate as CaC	937	5.0	mg/l	1	06/25/14	JD	SM 2320B-2011
Alkalinity, Carbonate	< 5.0	5.0	mg/l	1	06/25/14	JD	SM 2320B-2011
Alkalinity, Total as CaCO ₃	937	5.0	mg/l	1	06/25/14	JD	SM 2320B-2011
Chloride	4000	100	mg/l	200	06/23/14 15:19	SK	EPA 300.0/SW846 9056
HEM Oil and Grease	< 4.9	4.9	mg/l	1	07/07/14	SWT	EPA 1664A
Nitrogen, Nitrate	7.9	0.50	mg/l	50	06/23/14 13:07	SK	EPA 300.0/SW846 9056
Nitrogen, Nitrite ^a	< 0.20	0.20	mg/l	50	06/23/14 13:07	SK	EPA 300.0/SW846 9056
Solids, Total Dissolved	14800	10	mg/l	1	06/26/14	JD	SM 2540C-2011
Sulfate	4700	100	mg/l	200	06/23/14 15:19	SK	EPA 300.0/SW846 9056
Total Organic Carbon	33.6	5.0	mg/l	5	06/26/14 14:40	SK	SM 5310B-2011

(a) Elevated detection limit due to matrix interference.

RL = Reporting Limit

Report of Analysis

Client Sample ID:	OW-2	Date Sampled:	06/23/14
Lab Sample ID:	D59055-2F	Date Received:	06/23/14
Matrix:	AQ - Groundwater Filtered	Percent Solids:	n/a
Project:	Wattenberg GW		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Calcium	476000	400	ug/l	1	06/26/14	06/27/14 KV	SW846 6010C ¹	SW846 3010A ³
Magnesium	535000	200	ug/l	1	06/26/14	06/27/14 KV	SW846 6010C ¹	SW846 3010A ³
Potassium	15900	1000	ug/l	1	06/26/14	06/27/14 KV	SW846 6010C ¹	SW846 3010A ³
Sodium	3030000	4000	ug/l	10	06/26/14	06/30/14 KV	SW846 6010C ²	SW846 3010A ³

(1) Instrument QC Batch: MA4933

(2) Instrument QC Batch: MA4938

(3) Prep QC Batch: MP13281

RL = Reporting Limit

Report of Analysis

Client Sample ID:	OW-3	Date Sampled:	06/23/14
Lab Sample ID:	D59055-3	Date Received:	06/23/14
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8021B		
Project:	Wattenberg GW		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	TA22513.D	1	07/03/14	EV	n/a	n/a	GTA1257
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	2.6	1.0	0.20	ug/l	
108-88-3	Toluene	ND	2.0	1.0	ug/l	
100-41-4	Ethylbenzene	ND	2.0	1.0	ug/l	
1330-20-7	Xylenes (total)	ND	2.0	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
120-82-1	1,2,4-Trichlorobenzene	121%		60-140%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: OW-3
Lab Sample ID: D59055-3
Matrix: AQ - Ground Water
Project: Wattenberg GW

Date Sampled: 06/23/14
Date Received: 06/23/14
Percent Solids: n/a

4.5

4

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Bicarbonate as CaC	919	5.0	mg/l	1	06/25/14	JD	SM 2320B-2011
Alkalinity, Carbonate	< 5.0	5.0	mg/l	1	06/25/14	JD	SM 2320B-2011
Alkalinity, Total as CaCO ₃	919	5.0	mg/l	1	06/25/14	JD	SM 2320B-2011
Chloride	2960	250	mg/l	500	06/23/14 15:32	SK	EPA 300.0/SW846 9056
HEM Oil and Grease	< 5.0	5.0	mg/l	1	07/07/14	SWT	EPA 1664A
Nitrogen, Nitrate	9.6	0.20	mg/l	20	06/23/14 13:21	SK	EPA 300.0/SW846 9056
Nitrogen, Nitrite	2.9	0.080	mg/l	20	06/23/14 13:21	SK	EPA 300.0/SW846 9056
Solids, Total Dissolved	12800	10	mg/l	1	06/26/14	JD	SM 2540C-2011
Sulfate	4990	250	mg/l	500	06/23/14 15:32	SK	EPA 300.0/SW846 9056
Total Organic Carbon	32.8	5.0	mg/l	5	06/26/14 14:53	SK	SM 5310B-2011

RL = Reporting Limit

Report of Analysis

Page 1 of 1

Client Sample ID:	OW-3	Date Sampled:	06/23/14
Lab Sample ID:	D59055-3F	Date Received:	06/23/14
Matrix:	AQ - Groundwater Filtered	Percent Solids:	n/a
Project:	Wattenberg GW		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Calcium	411000	400	ug/l	1	06/26/14	06/27/14 KV	SW846 6010C ¹	SW846 3010A ³
Magnesium	442000	200	ug/l	1	06/26/14	06/27/14 KV	SW846 6010C ¹	SW846 3010A ³
Potassium	15100	1000	ug/l	1	06/26/14	06/27/14 KV	SW846 6010C ¹	SW846 3010A ³
Sodium	2590000	4000	ug/l	10	06/26/14	06/30/14 KV	SW846 6010C ²	SW846 3010A ³

(1) Instrument QC Batch: MA4933

(2) Instrument QC Batch: MA4938

(3) Prep QC Batch: MP13281

RL = Reporting Limit

Report of Analysis

Page 1 of 1

Client Sample ID: OW-4
 Lab Sample ID: D59055-4
 Matrix: AQ - Ground Water
 Method: SW846 8021B
 Project: Wattenberg GW

Date Sampled: 06/23/14
 Date Received: 06/23/14
 Percent Solids: n/a

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	TA22514.D	1	07/03/14	EV	n/a	n/a	GTA1257
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.20	ug/l	
108-88-3	Toluene	ND	2.0	1.0	ug/l	
100-41-4	Ethylbenzene	ND	2.0	1.0	ug/l	
1330-20-7	Xylenes (total)	ND	2.0	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
120-82-1	1,2,4-Trichlorobenzene	124%		60-140%

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	OW-4	Date Sampled:	06/23/14
Lab Sample ID:	D59055-4	Date Received:	06/23/14
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Project:	Wattenberg GW		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Bicarbonate as CaC	284	5.0	mg/l	1	06/25/14	JD	SM 2320B-2011
Alkalinity, Carbonate	< 5.0	5.0	mg/l	1	06/25/14	JD	SM 2320B-2011
Alkalinity, Total as CaCO ₃	284	5.0	mg/l	1	06/25/14	JD	SM 2320B-2011
Chloride	3270	250	mg/l	500	06/23/14 16:51	SK	EPA 300.0/SW846 9056
HEM Oil and Grease	< 6.8	6.8	mg/l	1	07/07/14	SWT	EPA 1664A
Nitrogen, Nitrate	75.4	5.0	mg/l	500	06/23/14 16:51	SK	EPA 300.0/SW846 9056
Nitrogen, Nitrite ^a	< 0.20	0.20	mg/l	50	06/23/14 13:34	SK	EPA 300.0/SW846 9056
Solids, Total Dissolved	16900	10	mg/l	1	06/26/14	JD	SM 2540C-2011
Sulfate	6920	250	mg/l	500	06/23/14 16:51	SK	EPA 300.0/SW846 9056
Total Organic Carbon	65.8	5.0	mg/l	5	06/26/14 15:04	SK	SM 5310B-2011

(a) Elevated detection limit due to matrix interference.

RL = Reporting Limit

Report of Analysis

Page 1 of 1

Client Sample ID:	OW-4	Date Sampled:	06/23/14
Lab Sample ID:	D59055-4F	Date Received:	06/23/14
Matrix:	AQ - Groundwater Filtered	Percent Solids:	n/a
Project:	Wattenberg GW		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Calcium	510000	400	ug/l	1	06/26/14	06/27/14 KV	SW846 6010C ¹	SW846 3010A ³
Magnesium	537000	200	ug/l	1	06/26/14	06/27/14 KV	SW846 6010C ¹	SW846 3010A ³
Potassium	20800	1000	ug/l	1	06/26/14	06/27/14 KV	SW846 6010C ¹	SW846 3010A ³
Sodium	3310000	4000	ug/l	10	06/26/14	06/30/14 KV	SW846 6010C ²	SW846 3010A ³

(1) Instrument QC Batch: MA4933

(2) Instrument QC Batch: MA4938

(3) Prep QC Batch: MP13281

RL = Reporting Limit



Misc. Forms

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Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody



CHAIN OF CUSTODY

4036 Youngfield St., Wheat Ridge, CO 80033
303-425-6021 FAX: 303-425-6854

FED-EX Tracking #	Bottle Order Control #
Accutest Quote #	Accutest Job # D59055

Client / Reporting Information				Project Information				Requested Analysis												Matrix Codes	
Company Name K.P. Kauffman Company, Inc.				Project Name WATTENBERG GROUNDWATER				<div style="display: flex; justify-content: space-between;"><div>OIL & GREASE 1664</div><div>ANIONS (NITRATE, NITRITE, SULFATE, CHLORIDE)</div><div>TOC</div><div>CATIONS (Ca, K, Mg, NA)</div><div>BTEX 8021</div><div>ALKALINITY (CARB/BICARB)</div><div>TDS</div><div>Specific Gravity</div><div>DOC</div></div>												Matrix Codes	
Address 1675 Broadway, Suite 2800				Street																	
City Denver				City Fort Lupton																	
State CO				State CO																	
Project Contact Susana Lara-Mesa				Project #																LAB USE ONLY	
Phone # 303-665-1400				Fax #																	
Sampler's Name MICHAEL HATTEL (303-665-1400)				Client Purchase Order # 7591																	
Accutest		SUMMA #		Collection		# of bottles		Number of preserved bottles													
Sample #	Field ID / Point of Collection	MEOH Vial #	Date	Time	Sampled by	Matrix	IC	MOH	MSOM	MOH	MSOM	MOH	MSOM	MOH	MSOM	MOH	MSOM				
	OW-1		6/23/14	8:45	MDH	GW	10	X		X								X	01		
	OW-2			07:50	MDH	GW	9	X		X								X	02		
	OW-3			07:00	MDH	GW	9	X		X								X	03		
	OW-4			06:05	MDH	GW	9	X		X								X	04		
																		05913			
																		6/23/14			
																		6/23/14			
Turnaround Time (Business days)				Data Deliverable Information				Comments / Remarks													
<input checked="" type="checkbox"/> Std. 10 Business Days				Approved By / Date:				<input type="checkbox"/> Commercial "A" <input type="checkbox"/> FULL CLP				PDF copy to Susana Lara-Mesa with KPK at SLaramesa@kpk.com									
								<input type="checkbox"/> Commercial "B" <input type="checkbox"/> NYASP Category A				PDF copy also to Mike Hattel with APEX at mhattel@msn.com									
								<input type="checkbox"/> NJ Reduced <input type="checkbox"/> NYASP Category B				Hard copy ONLY to Mike Hattel with APEX, P.O. Box 369,									
								<input type="checkbox"/> NJ Full <input type="checkbox"/> State Forms				Louisville, CO 80027-0369									
								<input checked="" type="checkbox"/> Hard Copy <input checked="" type="checkbox"/> PDF													
Emergency T/A data available VIA Lablink																					
Sample Custody must be documented below each time samples change possession, including courier delivery.																					
Relinquished by:		Date Time:		Received By:		Date Time:		Relinquished by:		Date Time:		Received By:		Date Time:		Received By:					
1 <i>[Signature]</i>		6/23/14 14:55		1 <i>[Signature]</i>		6/23/14 10:15		2				2									
Relinquished by:		Date Time:		Received By:		Date Time:		Relinquished by:		Date Time:		Received By:		Date Time:		Received By:					
3				3				4				4									
Relinquished by:		Date Time:		Received By:		Date Time:		Relinquished by:		Date Time:		Received By:		Date Time:		Received By:					
5				5				Custody Seal # <i>HL</i>		Preserved where applicable		On Ice		Cooler Temp. <i>13.9</i>							

within 2 hrs

6.9
70.00



GC Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Page 1 of 1

Job Number: D59055
Account: KPKCOD K.P. Kauffman Company, Inc.
Project: Wattenberg GW

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GTA1257-MB	TA22504.D	1	07/03/14	EV	n/a	n/a	GTA1257

The QC reported here applies to the following samples:

Method: SW846 8021B

D59055-1, D59055-2, D59055-3, D59055-4

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.20	ug/l	
100-41-4	Ethylbenzene	ND	2.0	1.0	ug/l	
108-88-3	Toluene	ND	2.0	1.0	ug/l	
1330-20-7	Xylenes (total)	ND	2.0	2.0	ug/l	

CAS No.	Surrogate Recoveries	Limits
120-82-1	1,2,4-Trichlorobenzene	94% 60-140%

Blank Spike Summary

Page 1 of 1

Job Number: D59055
Account: KPKCOD K.P. Kauffman Company, Inc.
Project: Wattenberg GW

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GTA1257-BS	TA22505.D	1	07/03/14	EV	n/a	n/a	GTA1257

The QC reported here applies to the following samples:

Method: SW846 8021B

D59055-1, D59055-2, D59055-3, D59055-4

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	27.2	26.2	96	70-130
100-41-4	Ethylbenzene	45.6	44.9	98	70-130
108-88-3	Toluene	212	198	94	70-130
1330-20-7	Xylenes (total)	216	221	102	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
120-82-1	1,2,4-Trichlorobenzene	104%	60-140%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: D59055
Account: KPKCOD K.P. Kauffman Company, Inc.
Project: Wattenberg GW

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D59055-1MS	TA22507.D	1	07/03/14	EV	n/a	n/a	GTA1257
D59055-1MSD	TA22508.D	1	07/03/14	EV	n/a	n/a	GTA1257
D59055-1	TA22506.D	1	07/03/14	EV	n/a	n/a	GTA1257

The QC reported here applies to the following samples:

Method: SW846 8021B

D59055-1, D59055-2, D59055-3, D59055-4

CAS No.	Compound	D59055-1 ug/l	Spike Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	45.5		27.2	59.8	53* a	27.2	59.5	51* a	1	55-133/30
100-41-4	Ethylbenzene	1.7	J	45.6	45.1	95	45.6	44.7	94	1	63-130/30
108-88-3	Toluene	ND		212	198	94	212	194	92	2	70-130/30
1330-20-7	Xylenes (total)	ND		216	220	102	216	218	101	1	64-130/30

CAS No.	Surrogate Recoveries	MS	MSD	D59055-1	Limits
120-82-1	1,2,4-Trichlorobenzene	107%	108%	118%	60-140%

(a) Outside control limits due to possible matrix interference.

* = Outside of Control Limits.

Metals Analysis

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D59055
Account: KPKCOD - K.P. Kauffman Company, Inc.
Project: Wattenberg GW

QC Batch ID: MP13281
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date: 06/26/14

Metal	RL	IDL	MDL	MB raw	final
Aluminum	100	8.6	41		
Antimony	30	2.1	19		
Arsenic	25	3.8	5.6		
Barium	10	.2	1.4		
Beryllium	10	.8	1.2		
Boron	50	.8	6.6		
Cadmium	10	.2	.36		
Calcium	400	2.2	41	5.9	<400
Chromium	10	.3	.4		
Cobalt	5.0	.4	.57		
Copper	10	.8	1.9		
Iron	70	1.5	9.5		
Lead	50	2.1	21		
Lithium	5.0	.4	2.7		
Magnesium	200	6.8	19	6.1	<200
Manganese	5.0	.01	.46		
Molybdenum	10	.4	.84		
Nickel	30	.5	.87		
Phosphorus	100	15	20		
Potassium	1000	99	270	9.8	<1000
Selenium	50	7.1	11		
Silicon	50	4.7	5.2		
Silver	30	.3	.6		
Sodium	400	4.9	170	29.5	<400
Strontium	5.0	.01	.12		
Thallium	10	1.8	4		
Tin	50	12	16		
Titanium	10	.1	2.1		
Uranium	50	2.9	5.5		
Vanadium	10	.4	.4		
Zinc	30	.4	3.2		

Associated samples MP13281: D59055-1F, D59055-2F, D59055-3F, D59055-4F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D59055
Account: KPKCOD - K.P. Kauffman Company, Inc.
Project: Wattenberg GW

QC Batch ID: MP13281
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date: 06/26/14

Metal	RL	IDL	MDL	MB	
				raw	final

(anr) Analyte not requested

7.1.1
7

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D59055
Account: KPKCOD - K.P. Kauffman Company, Inc.
Project: Wattenberg GW

QC Batch ID: MP13281
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date: 06/26/14

Metal	D58834-1F Original MS	Spikelot ICPALL2	% Rec	QC Limits
Aluminum				
Antimony	anr			
Arsenic	anr			
Barium	anr			
Beryllium	anr			
Boron	anr			
Cadmium	anr			
Calcium	110000	133000	25000	92.0 75-125
Chromium	anr			
Cobalt				
Copper	anr			
Iron				
Lead	anr			
Lithium				
Magnesium	8370	35200	25000	107.3 75-125
Manganese	anr			
Molybdenum	anr			
Nickel	anr			
Phosphorus				
Potassium	4190	32200	25000	112.0 75-125
Selenium	anr			
Silicon				
Silver	anr			
Sodium	6720	34100	25000	109.5 75-125
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc	anr			

Associated samples MP13281: D59055-1F, D59055-2F, D59055-3F, D59055-4F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D59055
 Account: KPKCOD - K.P. Kauffman Company, Inc.
 Project: Wattenberg GW

QC Batch ID: MP13281
 Matrix Type: AQUEOUS

Methods: SW846 6010C
 Units: ug/l

Prep Date: 06/26/14

Metal	D58834-1F	Spikelot	% Rec	QC
	Original MS	ICPALL2		Limits

(N) Matrix Spike Rec. outside of QC limits
 (anr) Analyte not requested

7.1.2
7

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D59055
 Account: KPKCOD - K.P. Kauffman Company, Inc.
 Project: Wattenberg GW

QC Batch ID: MP13281
 Matrix Type: AQUEOUS

Methods: SW846 6010C
 Units: ug/l

Prep Date: 06/26/14

Metal	D58834-1F Original MSD	Spikelot ICPALL2	% Rec	MSD RPD	QC Limit	
Aluminum						
Antimony	anr					
Arsenic	anr					
Barium	anr					
Beryllium	anr					
Boron	anr					
Cadmium	anr					
Calcium	110000	137000	25000	108.0	3.0	20
Chromium	anr					
Cobalt						
Copper	anr					
Iron						
Lead	anr					
Lithium						
Magnesium	8370	35600	25000	108.9	1.1	20
Manganese	anr					
Molybdenum	anr					
Nickel	anr					
Phosphorus						
Potassium	4190	32600	25000	113.6	1.2	20
Selenium	anr					
Silicon						
Silver	anr					
Sodium	6720	34400	25000	110.7	0.9	20
Strontium						
Thallium						
Tin						
Titanium						
Uranium						
Vanadium						
Zinc	anr					

Associated samples MP13281: D59055-1F, D59055-2F, D59055-3F, D59055-4F

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D59055
 Account: KFKCOD - K.F. Kauffman Company, Inc.
 Project: Wattenberg GW

QC Batch ID: MP13281
 Matrix Type: AQUEOUS

Methods: SW846 6010C
 Units: ug/l

Prep Date: 06/26/14

Metal	D58834-1F Original MSD	Spikelot ICPALL2	% Rec	MSD	QC
				RPD	Limit

(N) Matrix Spike Rec. outside of QC limits
 (anr) Analyte not requested

7.1.2
7

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D59055
Account: KPKCOD - K.P. Kauffman Company, Inc.
Project: Wattenberg GW

QC Batch ID: MP13281
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date: 06/26/14

Metal	BSP Result	Spikelot ICPALL2	% Rec	QC Limits
Aluminum				
Antimony	anr			
Arsenic	anr			
Barium	anr			
Beryllium	anr			
Boron	anr			
Cadmium	anr			
Calcium	26900	25000	107.6	80-120
Chromium	anr			
Cobalt				
Copper	anr			
Iron				
Lead	anr			
Lithium				
Magnesium	26500	25000	106.0	80-120
Manganese	anr			
Molybdenum	anr			
Nickel	anr			
Phosphorus				
Potassium	27000	25000	108.0	80-120
Selenium	anr			
Silicon				
Silver	anr			
Sodium	26600	25000	106.4	80-120
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc	anr			

Associated samples MP13281: D59055-1F, D59055-2F, D59055-3F, D59055-4F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D59055
 Account: KPKCOD - K.P. Kauffman Company, Inc.
 Project: Wattenberg GW

QC Batch ID: MP13281
 Matrix Type: AQUEOUS

Methods: SW846 6010C
 Units: ug/l

Prep Date: 06/26/14

Metal	BSP	Spikelot	% Rec	QC
	Result	ICPALL2		Limits

(anr) Analyte not requested

7.1.3

7

SERIAL DILUTION RESULTS SUMMARY

Login Number: D59055
 Account: KPKCOD - K.P. Kauffman Company, Inc.
 Project: Wattenberg GW

QC Batch ID: MP13281
 Matrix Type: AQUEOUS

Methods: SW846 6010C
 Units: ug/l

Prep Date: 06/26/14

Metal	D58834-1F Original	SDL 1:5	%DIF	QC Limits
Aluminum				
Antimony	anr			
Arsenic	anr			
Barium	anr			
Beryllium	anr			
Boron	anr			
Cadmium	anr			
Calcium	110000	118000	7.2	0-10
Chromium	anr			
Cobalt				
Copper	anr			
Iron				
Lead	anr			
Lithium				
Magnesium	8370	8710	4.1	0-10
Manganese	anr			
Molybdenum	anr			
Nickel	anr			
Phosphorus				
Potassium	4190	4220	0.7	0-10
Selenium	anr			
Silicon				
Silver	anr			
Sodium	6720	6670	0.7	0-10
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc	anr			

Associated samples MP13281: D59055-1F, D59055-2F, D59055-3F, D59055-4F

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits

SERIAL DILUTION RESULTS SUMMARY

Login Number: D59055
 Account: KPKCOD - K.P. Kauffman Company, Inc.
 Project: Wattenberg GW

QC Batch ID: MP13281
 Matrix Type: AQUEOUS

Methods: SW846 6010C
 Units: ug/l

Prep Date: 06/26/14

	D58834-1F		QC
Metal	Original SDL 1:5	%DIF	Limits

(anr) Analyte not requested

7.1.4

7

General Chemistry

QC Data Summaries

∞

Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries

METHOD BLANK AND SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D59055
Account: KPKCOD - K.P. Kauffman Company, Inc.
Project: Wattenberg GW

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Alkalinity, Bicarbonate as CaC	GN25284	5.0	0.0	mg/l	100	97.8	97.8	90-110%
Alkalinity, Carbonate	GN25285	5.0	0.0	mg/l	100	97.8	97.8	80-120%
Alkalinity, Total as CaCO3	GN25283	5.0	0.0	mg/l	100	97.8	97.8	90-110%
Chloride	GP12887/GN25243	0.50	0.0	mg/l	5	4.97	99.4	90-110%
HEM Oil and Grease	GP12969/GN25402	5.0	0.0	mg/l	40	32.8	82.0	78-114%
Nitrogen, Nitrate	GP12887/GN25243	0.010	0.0	mg/l	0.1	0.103	103.0	90-110%
Nitrogen, Nitrite	GP12887/GN25243	0.0040	0.0	mg/l	0.05	0.0523	104.6	90-110%
Solids, Total Dissolved	GN25298	10	0.0	mg/l	400	402	100.5	90-110%
Sulfate	GP12887/GN25243	0.50	0.0	mg/l	5	4.96	99.2	90-110%
Total Organic Carbon	GP12920/GN25309	1.0	0.0	mg/l	8.82	8.84	100.2	90-110%
Total Organic Carbon	GP12944/GN25355	1.0	0.0	mg/l	8.82	8.99	101.9	90-110%
pH	GN25245			su	8.00	8.03	100.4	99.1-100.9%

Associated Samples:

Batch GN25245: D59055-1
Batch GN25283: D59055-1, D59055-2, D59055-3, D59055-4
Batch GN25284: D59055-1, D59055-2, D59055-3, D59055-4
Batch GN25285: D59055-1, D59055-2, D59055-3, D59055-4
Batch GN25298: D59055-1, D59055-2, D59055-3, D59055-4
Batch GP12887: D59055-1, D59055-2, D59055-3, D59055-4
Batch GP12920: D59055-2, D59055-3, D59055-4
Batch GP12944: D59055-1
Batch GP12969: D59055-1, D59055-2, D59055-3, D59055-4
(*) Outside of QC limits

BLANK SPIKE DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D59055
Account: KPKCOD - K.P. Kauffman Company, Inc.
Project: Wattenberg GW

Analyte	Batch ID	Units	Spike Amount	BSD Result	RPD	QC Limit
HEM Oil and Grease	GP12969/GN25402	mg/l	40	34.9	6.2	20%

Associated Samples:

Batch GP12969: D59055-1, D59055-2, D59055-3, D59055-4

(*) Outside of QC limits

8.2
8

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D59055
Account: KPKCOD - K.P. Kauffman Company, Inc.
Project: Wattenberg GW

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Alkalinity, Total as CaCO3	GN25283	D59055-2	mg/l	937	976	4.1	0-20%
Solids, Total Dissolved	GN25298	D59056-1	mg/l	20700	20700	0.0	0-20%
Total Organic Carbon	GP12920/GN25309	D59118-2	mg/l	3.2	3.1	3.2	0-20%
Total Organic Carbon	GP12944/GN25355	D59176-2	mg/l	0.0	0.0	0.0	0-20%

Associated Samples:

Batch GN25283: D59055-1, D59055-2, D59055-3, D59055-4

Batch GN25298: D59055-1, D59055-2, D59055-3, D59055-4

Batch GP12920: D59055-2, D59055-3, D59055-4

Batch GP12944: D59055-1

(*) Outside of QC limits

8.3

8

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D59055
Account: KPKCOD - K.P. Kauffman Company, Inc.
Project: Wattenberg GW

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Alkalinity, Total as CaCO3	GN25283	D59045-2	mg/l	265	100	351	85.3	80-120%
Chloride	GP12887/GN25243	D59055-4	mg/l	2830	2500	5860	103.6	80-120%
Chloride	GP12887/GN25243	D59055-4	mg/l	3270	2500	5860	103.6	80-120%
Nitrogen, Nitrate	GP12887/GN25243	D59055-4	mg/l	72.7	50	125	99.2	80-120%
Nitrogen, Nitrate	GP12887/GN25243	D59055-4	mg/l	75.4	50	125	99.2	80-120%
Nitrogen, Nitrite	GP12887/GN25243	D59055-4	mg/l	0.0	25	29.7	118.8	80-120%
Nitrogen, Nitrite	GP12887/GN25243	D59055-4	mg/l	0.0	25	29.7	118.8	80-120%
Sulfate	GP12887/GN25243	D59055-4	mg/l	3140	2500	9440	100.8	80-120%
Sulfate	GP12887/GN25243	D59055-4	mg/l	6920	2500	9440	100.8	80-120%
Total Organic Carbon	GP12920/GN25309	D59118-1	mg/l	3.2	10	13.4	102.0	80-120%
Total Organic Carbon	GP12944/GN25355	D59176-1	mg/l	0.51	10	10.5	99.9	80-120%

Associated Samples:

Batch GN25283: D59055-1, D59055-2, D59055-3, D59055-4

Batch GP12887: D59055-1, D59055-2, D59055-3, D59055-4

Batch GP12920: D59055-2, D59055-3, D59055-4

Batch GP12944: D59055-1

(*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

8.4

8

MATRIX SPIKE DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D59055
Account: KPKCOD - K.P. Kauffman Company, Inc.
Project: Wattenberg GW

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MSD Result	RPD	QC Limit
Alkalinity, Total as CaCO ₃	GN25283	D59045-2	mg/l	265	100	346	1.2	20%
Total Organic Carbon	GP12920/GN25309	D59118-1	mg/l	3.2	10	13.1	2.3	20%
Total Organic Carbon	GP12944/GN25355	D59176-1	mg/l	0.51	10	10.2	2.9	20%

Associated Samples:

Batch GN25283: D59055-1, D59055-2, D59055-3, D59055-4

Batch GP12920: D59055-2, D59055-3, D59055-4

Batch GP12944: D59055-1

(*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

8.5
8



07/15/14

Technical Report for

K.P. Kauffman Company, Inc.

Wattenberg GW

7591

Accutest Job Number: D59576

Sampling Date: 07/09/14

Report to:

Apex Consulting Services
PO Box 369
Louisville, CO 80027-0369
mhattel@msn.com; slaramesa@kpk.com

ATTN: Susana Lara-Mesa

Total number of pages in report: 13



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

A handwritten signature in black ink, appearing to read 'Scott Heideman'.

Scott Heideman
Laboratory Director

Client Service contact: Renea Jackson 303-425-6021

Certifications: CO (CO00049), ID, NE (CO00049), ND (R-027), NJ (CO 0007), OK (D9942), UT (NELAP CO00049), TX (T104704511)

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Test results relate only to samples analyzed.

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Sample Summary

K.P. Kauffman Company, Inc.

Job No: D59576

Wattenberg GW
Project No: 7591

Sample Number	Collected Date	Time By	Received	Matrix Code Type	Client Sample ID
D59576-1	07/09/14	08:00 MDH	07/09/14	AQ Ground Water	OW-1



CASE NARRATIVE / CONFORMANCE SUMMARY

Client: K.P. Kauffman Company, Inc.

Job No D59576

Site: Wattenberg GW

Report Date 7/15/2014 4:41:36 PM

On 07/09/2014, 1 sample(s), 0 Trip Blank(s), and 0 Field Blank(s) were received at Accutest Mountain States (AMS) at a temperature of 11.7 °C. The samples were intact and properly preserved, unless noted below. An AMS Job Number of D59576 was assigned to the project. The lab sample ID, client sample ID, and date of sample collection are detailed in the report's Results Summary.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

Volatiles by GC By Method SW846 8021B

Matrix AQ

Batch ID: GTA1264

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D59511-21MS, D59511-21MSD were used as the QC samples indicated.
- D59576-1: The pH of the sample was >2 at time of analysis.

AMS certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting AMS's Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

AMS is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. This report is authorized by AMS indicated via signature on the report cover.

Summary of Hits

Page 1 of 1

Job Number: D59576
Account: K.P. Kauffman Company, Inc.
Project: Wattenberg GW
Collected: 07/09/14

Lab Sample ID	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
---------------	------------------	-----------------	----	-----	-------	--------

D59576-1 OW-1

Benzene ^a	12.0	1.0	0.20	ug/l	SW846 8021B
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(a) The pH of the sample was > 2 at time of analysis.



Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	OW-1	Date Sampled:	07/09/14
Lab Sample ID:	D59576-1	Date Received:	07/09/14
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8021B		
Project:	Wattenberg GW		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	TA22628.D	1	07/14/14	EV	n/a	n/a	GTA1264
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	12.0	1.0	0.20	ug/l	
108-88-3	Toluene	ND	2.0	1.0	ug/l	
100-41-4	Ethylbenzene	ND	2.0	1.0	ug/l	
1330-20-7	Xylenes (total)	ND	2.0	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
120-82-1	1,2,4-Trichlorobenzene	110%		60-140%

(a) The pH of the sample was > 2 at time of analysis.

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Misc. Forms

5

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

GC Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Page 1 of 1

Job Number: D59576

Account: KPKCOD K.P. Kauffman Company, Inc.

Project: Wattenberg GW

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GTA1264-MB	TA22623.D	1	07/14/14	EV	n/a	n/a	GTA1264

The QC reported here applies to the following samples:

Method: SW846 8021B

D59576-1

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.20	ug/l	
100-41-4	Ethylbenzene	ND	2.0	1.0	ug/l	
108-88-3	Toluene	ND	2.0	1.0	ug/l	
1330-20-7	Xylenes (total)	ND	2.0	2.0	ug/l	

CAS No.	Surrogate Recoveries	Limits
120-82-1	1,2,4-Trichlorobenzene	109% 60-140%

Blank Spike Summary

Page 1 of 1

Job Number: D59576

Account: KPKCOD K.P. Kauffman Company, Inc.

Project: Wattenberg GW

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GTA1264-BS	TA22624.D	1	07/14/14	EV	n/a	n/a	GTA1264

The QC reported here applies to the following samples:

Method: SW846 8021B

D59576-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	27.2	28.2	104	70-130
100-41-4	Ethylbenzene	45.6	49.3	108	70-130
108-88-3	Toluene	212	219	103	70-130
1330-20-7	Xylenes (total)	216	243	113	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
120-82-1	1,2,4-Trichlorobenzene	115%	60-140%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: D59576

Account: KPKCOD K.P. Kauffman Company, Inc.

Project: Wattenberg GW

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D59511-21MS	TA22626.D	1	07/14/14	EV	n/a	n/a	GTA1264
D59511-21MSD	TA22627.D	1	07/14/14	EV	n/a	n/a	GTA1264
D59511-21	TA22625.D	1	07/14/14	EV	n/a	n/a	GTA1264

The QC reported here applies to the following samples:

Method: SW846 8021B

D59576-1

CAS No.	Compound	D59511-21 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	ND		27.2	27.6	101	27.2	27.6	101	0	55-133/30
100-41-4	Ethylbenzene	ND		45.6	48.3	106	45.6	47.8	105	1	63-130/30
108-88-3	Toluene	ND		212	213	101	212	211	100	1	70-130/30
1330-20-7	Xylenes (total)	ND		216	238	110	216	236	109	1	64-130/30

CAS No.	Surrogate Recoveries	MS	MSD	D59511-21	Limits
120-82-1	1,2,4-Trichlorobenzene	113%	112%	110%	60-140%

* = Outside of Control Limits.



07/17/14

Technical Report for

K.P. Kauffman Company, Inc.

Wattenberg GW

7591

Accutest Job Number: D59801

Sampling Date: 07/16/14

Report to:

Apex Consulting Services
PO Box 369
Louisville, CO 80027-0369
mhattel@msn.com; slaramesa@kpk.com

ATTN: Susana Lara-Mesa

Total number of pages in report: 13



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

A handwritten signature in black ink, appearing to read 'Scott Heideman'.

Scott Heideman
Laboratory Director

Client Service contact: Renea Jackson 303-425-6021

Certifications: CO (CO00049), ID, NE (CO00049), ND (R-027), NJ (CO 0007), OK (D9942), UT (NELAP CO00049), TX (T104704511)

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Sample Summary

K.P. Kauffman Company, Inc.

Job No: D59801

Wattenberg GW
Project No: 7591

Sample Number	Collected Date	Time By	Received	Matrix Code Type	Client Sample ID
D59801-1	07/16/14	11:20 MDH	07/16/14	AQ Ground Water	OW-3



CASE NARRATIVE / CONFORMANCE SUMMARY

Client: K.P. Kauffman Company, Inc.

Job No D59801

Site: Wattenberg GW

Report Date 7/17/2014 12:03:22 PM

On 07/16/2014, 1 sample(s), 0 Trip Blank(s), and 0 Field Blank(s) were received at Accutest Mountain States (AMS) at a temperature of 11.8 °C. The samples were intact and properly preserved, unless noted below. An AMS Job Number of D59801 was assigned to the project. The lab sample ID, client sample ID, and date of sample collection are detailed in the report's Results Summary.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

Volatiles by GC By Method SW846 8021B

Matrix	AQ	Batch ID:	GTA1265
--------	----	-----------	---------

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D59801-1MS, D59801-1MSD were used as the QC samples indicated.
- D59801-1MS and D59801-1MSD: The pH of the sample was >2 at time of analysis.
- D59801-1: The pH of the sample was >2 at time of analysis.

AMS certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting AMS's Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

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Summary of Hits

Page 1 of 1

Job Number: D59801
Account: K.P. Kauffman Company, Inc.
Project: Wattenberg GW
Collected: 07/16/14

Lab Sample ID	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
---------------	------------------	-----------------	----	-----	-------	--------

D59801-1 OW-3

No hits reported in this sample.



Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	OW-3	Date Sampled:	07/16/14
Lab Sample ID:	D59801-1	Date Received:	07/16/14
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8021B		
Project:	Wattenberg GW		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	TA22662.D	1	07/16/14	EV	n/a	n/a	GTA1265
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.20	ug/l	
108-88-3	Toluene	ND	2.0	1.0	ug/l	
100-41-4	Ethylbenzene	ND	2.0	1.0	ug/l	
1330-20-7	Xylenes (total)	ND	2.0	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
120-82-1	1,2,4-Trichlorobenzene	107%		60-140%

(a) The pH of the sample was > 2 at time of analysis.

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound



Misc. Forms

5

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

GC Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Page 1 of 1

Job Number: D59801

Account: KPKCOD K.P. Kauffman Company, Inc.

Project: Wattenberg GW

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GTA1265-MB	TA22660.D	1	07/16/14	EV	n/a	n/a	GTA1265

The QC reported here applies to the following samples:

Method: SW846 8021B

D59801-1

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.20	ug/l	
100-41-4	Ethylbenzene	ND	2.0	1.0	ug/l	
108-88-3	Toluene	ND	2.0	1.0	ug/l	
1330-20-7	Xylenes (total)	ND	2.0	2.0	ug/l	

CAS No.	Surrogate Recoveries	Limits
120-82-1	1,2,4-Trichlorobenzene	105% 60-140%

Blank Spike Summary

Page 1 of 1

Job Number: D59801

Account: KPKCOD K.P. Kauffman Company, Inc.

Project: Wattenberg GW

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GTA1265-BS	TA22661.D	1	07/16/14	EV	n/a	n/a	GTA1265

The QC reported here applies to the following samples:

Method: SW846 8021B

D59801-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	27.2	27.7	102	70-130
100-41-4	Ethylbenzene	45.6	48.2	106	70-130
108-88-3	Toluene	212	214	101	70-130
1330-20-7	Xylenes (total)	216	237	110	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
120-82-1	1,2,4-Trichlorobenzene	109%	60-140%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: D59801

Account: KPKCOD K.P. Kauffman Company, Inc.

Project: Wattenberg GW

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D59801-1MS ^a	TA22663.D	1	07/16/14	EV	n/a	n/a	GTA1265
D59801-1MSD ^a	TA22664.D	1	07/16/14	EV	n/a	n/a	GTA1265
D59801-1 ^a	TA22662.D	1	07/16/14	EV	n/a	n/a	GTA1265

The QC reported here applies to the following samples:

Method: SW846 8021B

D59801-1

CAS No.	Compound	D59801-1 ug/l	Spike Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	ND		27.2	27.9	103	27.2	27.5	101	1	55-133/30
100-41-4	Ethylbenzene	ND		45.6	48.3	106	45.6	47.5	104	2	63-130/30
108-88-3	Toluene	ND		212	214	101	212	210	99	2	70-130/30
1330-20-7	Xylenes (total)	ND		216	238	110	216	233	108	2	64-130/30

CAS No.	Surrogate Recoveries	MS	MSD	D59801-1	Limits
120-82-1	1,2,4-Trichlorobenzene	114%	115%	107%	60-140%

(a) The pH of the sample was > 2 at time of analysis.

* = Outside of Control Limits.